DOCUMENT RESUME

ED 154 598 EC 110 627

AUTHOR Cobb, Sharon Gotch; And Others
TITLE CONN-CEPT III. Once Upon a Building: Creating a Differentiated Learning Environment for the Gifted and Talented.
INSTITUTION Connecticut State Dept. of Education, Hartford. Bureau of Pupil Personnel and Special Education Services.
PUB DATE 78
NOTE 106p.

EDRS PRICE MF-$0.83 HC-$6.01 Plus Postage.
DESCRIPTORS *Curriculum Development; Elementary Secondary Education; *Gifted; Learning Activities; *Program Development; *Program Planning; *Talented Students

ABSTRACT

Using steps in constructing a building as guidelines, the booklet discusses elements in developing programs and curricula for the gifted and talented. Addressed are the following aspects: defining the needs of the gifted and talented, locating resources, involving faculty and administration, brainstorming concept areas and goals, and planning a unit framework. Eighteen sample activities, including self evaluation, resource presentation, and idea station activities are included. (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED154598

CONN-CEPT III

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ONCE UPON A BUILDING
CREATING A DIFFERENTIATED LEARNING ENVIRONMENT FOR THE GIFTED AND TALENTED
CONNECTICUT STATE DEPARTMENT OF EDUCATION
BUREAU OF PUPIL PERSONNEL AND SPECIAL EDUCATIONAL SERVICES
HARTFORD, CONNECTICUT
by
Sharon Gotch Cobb
Peter H. Cobb
Clista M. E. Dow

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
W.G. Vassar
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

EC110627

COMMISSIONER OF EDUCATION

MARK R. SHEDD

DEPUTY COMMISSIONER OF EDUCATION

Peter P. Horoschak

ASSOCIATE COMMISSIONER OF EDUCATION
DIVISION OF INSTRUCTIONAL SERVICES

Francis A. McElaney

BUREAU OF PUPIL PERSONNEL AND SPECIAL
EDUCATIONAL SERVICES

Robert I. Margolin, Chief

CONSULTANTS

Ramona A. Apker
Henry F. Drewniany
Garland A. Fitzpatrick
Claire B. Gallant
Virginia Guldager
Les Horvath
Kenneth E. Jacobs
Forest A. LaValley
Joseph Lavender
Jack Mead
David R. Murphy
Clarence H. Steinberger
William G. Vassar
Sylvia Velilla
Lucian J. Zadrozny

FOREWORD

Professional personnel working with the gifted and talented in Connecticut's school districts identified a specific need to provide various approaches to differentiating instruction for the gifted and talented throughout the State. I am quite sure that this latest publication will move the field one step further in attempting to reach its goal of meeting the needs of professionals working with the gifted and talented.

I am confident that the differentiated approaches to curriculum presented in this publication, prepared by some of Connecticut's outstanding school district professionals, will be of great assistance to those professionals working with the gifted and talented at the district level.

Robert I. Margolin, Chief
Bureau of Pupil Personnel and
Special Educational Services
Connecticut State Department
of Education

ACKNOWLEDGMENT

The authors of this publication were Sharon Gotch Cobb, Peter H. Cobb and Clista M. E. Dow. Sharon Cobb is Director of the East Hartford, Connecticut Program for the Gifted and Talented, Peter Cobb is a consultant for gifted and talented programs throughout the country and Clista Dow is Director of Programs for the Gifted and Talented in Sharon, Massachusetts.

The Department of Education requested the three authors to design and develop a differentiated approach to instruction which could be used in the various programs at the district level throughout Connecticut. The Department is deeply grateful to the authors for designing and preparing this curriculum guide for use by instructional personnel in local school districts.

It is hoped that this approach to differentiation of instruction for gifted and talented children and youth will bring us a major step forward to meeting the needs of such children and youth in the Connecticut public schools.

The contents of this text were developed with funds from P. L. 93-380, Title IV, Section 403 through the Bureau of Grants Processing and Information and the Bureau of Pupil Personnel and Special Educational Services.

William G. Vassar, Consultant
Gifted and Talented Programs
Connecticut State Department
of Education

TABLE OF CONTENTS

	Page No.
Foreword	i
Acknowledgment	ii
Once Upon a Building	1-6
Receiving Your Commission	7-8
Defining the Needs of the Gifted and Talented	9-11
Examining the Plot of Land	12-21
Examine the Principles on Which the Blueprint is Designed	22-23
Examining the Foundation	24-26
Planning and Building the Framework	27-55
Creating Bricks and Windows	56-62
Bricklaying Skills	63-64
A Sample Collection of Walls	65-96
Glossary	97-99

ONCE UPON A BUILDING

Creating a Differentiated Learning Environment for the Gifted and Talented

Once upon a time there existed a desire to plan a new building for a group of exceptional individuals. When the building was finished it might serve as a model for other buildings for other groups of exceptional individuals. The building would be unique in that all the people who would work in the building would take an active part in the creative process of designing and constructing the building.

Many people had searched around to find an interesting building that might be altered to suit the needs of each of the members of the group. However, they could not find the "just right" establishment so they decided to start from scratch and use their own creative ideas to design and build their very own building to fit their very own needs.

Members of the community helped them to hunt for just the right plot of land on which to build the foundation. They chose a solid piece of ground, capable of supporting a strong edifice. The plot was large enough to allow for expansion of the needs of the group of exceptional individuals. The plot was a splendid one with a lovely natural environment. Right within its confines could be found most of the raw materials needed to erect the building - the sand, the clay, and the water.

Right in the community were experts who could serve as consultants. The group itself wanted to serve as the contractors and sub-contractors. Members of the community were supportive of the venture and pledged their support in constructing the road leading to the site. Everyone made commitments and offered to help in any way he could.

Before the architectural team was hired, certain members of the community sat down with the group of exceptional individuals to determine their unique needs. Both their cognitive and affective needs would become the basis for the composition of the bricks and for the mortar that would bind the bricks together into walls. Since the building was to be designed to meet the needs of the individuals who would work in it, each was carefully screened and his/her unique talents and gifts were identified.

A major step was the construction of a road leading to the construction site. The roadbed was laid upon strong principles and a firm knowledge of the needs of those who would travel the road.

To design the building an architectural team was hired. The team would be led by several people who had wide experience in designing buildings for unique people. An important feature of the architectural team was the inclusion of the contractos who assisted in all phases of the design. Another very important decision that was made was to create many possible designs before arriving at the final plan.

The architectural team was careful to consider the ultimate cost of such a building. They were concerned that it be a feasible design and that the materials used in its construction would be durable. The contractors' decision to create their own building materials rather than using prefabricated materials was welcomed by all concerned.

No decision was made quickly. The contractors made hundreds of suggestions. Each suggestion was discussed, some were modified, and many were elaborated upon. The quality of each idea was finally evaluated. Many ideas were rejected because they did not fully satisfy the needs of the group. Upon completion of the final blueprints, the architectural team applied to the state and local districts for permission to build. They obtained building permits and copies of the state building codes. When all the plans were deemed to be in order and funds appropriated, the actual construction of the foundation was begun.

In planning and building the foundation, the architects had carefully considered the size of the group, its working and learning styles, the amount of space required, the time the occupants would spend in the building, and the kind of environment that must be provided to allow for flexibility and the greatest development of each individual. The architects realized that the foundation was extremely important because it determined the parameters of the walls, the kind of physical environment that could be created, and the extent to which various materials and resources could be used in the actual construction of the building.

At last, the foundation was built, and the contractors were commissioned to begin the framework of the building.

To the contractors were left a number of major decisions. If the contractors discovered flaws in the design, they were obliged to correct them as they saw fit. They had considerable power to redesign the initial plans; after all, they would eventually become the occupants of the building, and they had to have a design that would meet their needs as well as the needs of the other members of the group. The contractors were to make the ultimate decision on the type of facility, the size and shape of the walls, the kinds of materials used in making the bricks, and the number and kind of windows to be included.

After the contractors had planned and built the framework, they began the search for raw materials to manufacture the bricks and to make the glass for the windows. After consulting the subcontractors, they began to collect many kinds of clay, sand, and water.

The contractors went to many different sources for the water - waterfalls, streams, ponds, lakes, and even the rain. It was important to have water of different temperatures. It was important that the water be full of bubbles rather than flat or distilled. It was important to seek out water which contained different minerals. But most of all, it was important that the water not be stagnant; it had to be water with a future!

The clay for the bricks had to be chosen to promote both creative and critical thinking skills. All clay had to be chosen from the highest ground because that clay was found to be most appropriate for these special bricks. Some clay was chosen for its unusual questioning patterns. The texture of the clay had to be both interesting and imaginative. The clay had to be chosen for its open-endedness as well as for the ability of each individual to deal with its composition.

Sand to make the glass had to be carefully chosen. The contractors wanted a great deal of natural light in the building; therefore they planned to have many windows of various designs. They decided to include skylights as well as casement and bay windows designed with colorful glass of many hues.

When all the raw materials had been gathered, the contractors were ready to begin the process of creating the bricks. The contractors looked forward to making the bricks because the firing procedure was the most creative process of all.

The quality of the bricks would depend upon the amount of clay and water chosen and the way they were put together. A great deal of evaluation went into the firing process. The contractors and subcontractors asked many questions and tried many different methods. What are all the different ways these materials can be fired together? Will the bricks be too hard or too soft? How shall we assess the quality of the bricks? What textures are desired? What are the strengths and weaknesses that must be considered? Are there enough resources to manufacture each brick?

The firing process was long and hard. It required a great deal of time and a creative kiln. Sometimes the bricks crumbled from too much heat and lack of the appropriate balance of materials. Sometimes too much water was added and the bricks just evaporated away. Hundreds of bricks had to be manufactured and stored in a safe place for later use in the actual construction of the walls.

Mixing the mortar was extremely important because the right amount of flexibility had to be achieved. Too much cement made the mortar too stiff and rigid. Too much liquid would make the mortar useless. The mortar had to be just right to provide a psychologically safe environment. The mortar would satisfy the affective needs of the occupants, needs that they held in common with all other people.

The major strength of the mortar was in the freedom it allowed. It would have to allow for freedom to explore interests, to challenge ideas, and to make mistakes. It would have to allow for freedom to interact, to express feelings, and to be free from pressure. The perfect mortar provided the freedom to seek out new resources for learning and to be intellectually playful. It would allow for freedom to defer judgment, to make one's own decisions, and to be responsible for the decisions made. The mortar would have to allow for the development and discovery of one's own learning process. Above all, the mortar had to allow for the freedom to be unique and to experience the internal joy and pride in the learning process. All in all, the ideal mortar would develop autonomy and would be effective in promoting a healthy self-image.

The contractors then polished their bricklaying skills to put the bricks and mortar together to make the walls of the building. To make the bricks fit well they planned carefully, selecting just the right bricks for just the right spot in the wall. Subcontractors were encouraged to take part in the bricklaying process, creating new patterns as they went along. All were allowed to use their own interests and special talents so that each wall would be different and creative. Everyone experienced great internal joy and pride as they worked together in this creative process.

Every so often they stood back and evaluated the job they were doing. Sometimes they removed a portion of the wall and began again. Sometimes they worked very quickly, and sometimes they worked very slowly. They tried to fit windows into the walls at the most appropriate places. They proceeded only when the right combination of bricks, mortar and glass were chosen.

When enough materials were finished and a number of the walls completed, all the occupants entered the building to try it out. If some brick didn't fit into the overall design, it was removed and another was manufactured to take its place. The building was exciting because it was always changing. It was at this point that many of the subcontractors had enough experience to design and manufacture their own bricks and add them to the walls.

A major decision to be made by all involved was the nature of the roof design. After considerable discussion it was decided to provide an umbrella-type roof. Then, if the climate was sunny and the air fresh, the umbrella could be closed to allow the light and fresh air to pour into the building from above. This would allow for maximum growth so that the building could be made higher and higher until it reached its greatest potential. An umbrella-type roof had another advantage; if the weather were stormy, it could be opened to provide protection for the occupants of the building. The umbrella would have to be quite strong to survive any hurricane or tornado that might unexpectedly arrive.

Soon the building inspectors arrived to make an initial inspection. They wanted to determine the strength of the materials, the skill of the construction, and to see if the needs of the occupants were being met. They suggested some changes in the design. They also had the job of devising a maintenance plan for the continuous inspection of the building. Members of the community were also invited to inspect the building to see how things were working out.

No one can predict how long the building will stand. The building will always need renovation as the materials wear out and new occupants of the building come to work. The building will have to be flexible enough to accomodate new contractors and new building inspectors. It is hoped that the building will grow higher and higher and will serve as a model for other buildings for other groups of very exceptional people.

MORAL

CLAY + WATER + FIRING PROCESS = BRICKS

(instructional strategies based upon cognitive needs)

(knowledge and resources)

(the creative and evaluative process)

BRICKS + MORTAR + BRICKLAYING PROCESS = WALLS

(differentiated learning activities)

(freedoms based upon affective needs)

(cognitive and affective skills of teacher)

WALLS + WINDOWS = BUILDING

(collections of learning activities to develop higher level thinking)

(activities designed to teach content)

BUILDING = (The process of creating a differentiated learning environment)

The development of a differentiated learning environment is the development of a differentiated curriculum for the gifted and talented.

Receiving
Your
Commission

Your Commission as a Contractor

The contractor, a teacher as curriculum builder, has received a commission to build a differentiated learning environment for gifted and talented students. What are the key steps in this creative process?

1. Define the affective and cognitive needs of gifted and talented students.

2. Examine the plot of land where the raw materials for building are located.

3. Examine the principles upon which the "Once Upon A Building" blueprint is designed.

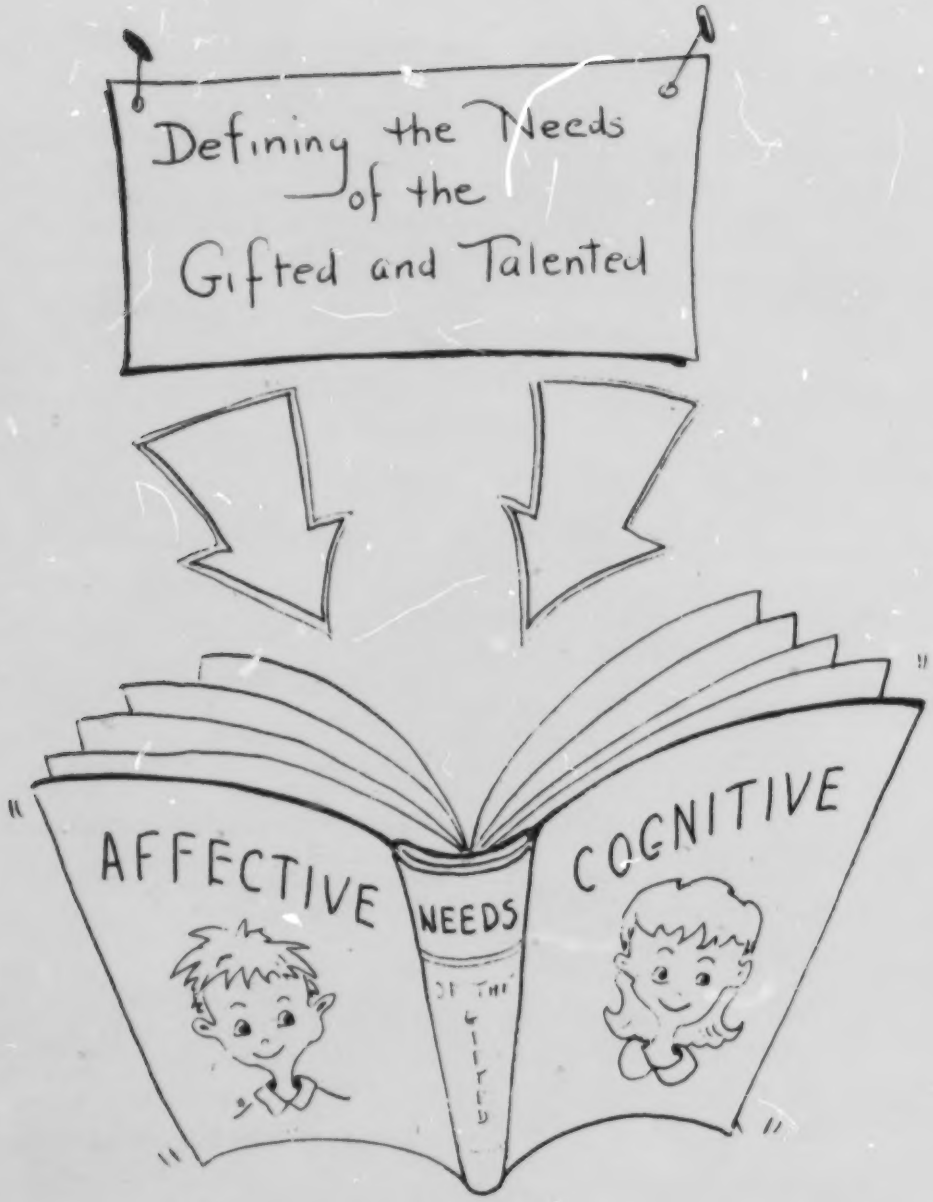
4. Examine the foundation of the building, the administrative design of your program for the gifted and talented.

5. Plan and build the framework for the building.

6. Create bricks and windows to use in making the walls.

7. Make collections of bricks and windows.

8. Utilize your bricklaying skills to erect the walls of the building.


Defining the Needs of the Gifted and Talented
AFFECTIVE
NEEDS
COGNITIVE

Defining Affective Needs

All human beings share the same affective or emotional needs. These affective needs are existential, part of the "human condition." Decisions as to what affective needs are to be met will directly affect and contribute to the differentiated learning environment to be established for the gifted and talented. Affective needs, defined in terms of freedoms, will become the mortar which will hold the bricks together.

(Selected Affective Needs)

... the freedom to challenge ideas

... the freedom to have one's divergent responses to questions accepted

... the freedom to have one's unusual solutions to problems accepted

... the freedom to explore one's own interests

... the freedom to seek out new resources for learning

... the freedom to discover one's own learning processes

... the freedom to make one's own decisions and be responsible for the decisions made

... the freedom to be intellectually playful

... the freedom to defer judgment

... the freedom to become an independent learner

... the freedom to interact with one's intellectual peers

... the freedom to ask questions

... the freedom to experience the internal joy and pride in the learning process

... the freedom to be unique

Defining Cognitive Needs

The contractor should define the cognitive needs of gifted and talented students in terms of higher-level thinking skills, intellectual processes which seem to be more complex than those which simply allow the acquisition of factual knowledge. These skills may be more precisely defined and adapted for the gifted from the variety of theoretical models of human intelligence which are now available in psychological and educational literature.

(Sample Sources of Cognitive Needs)

Bloom, Benjamin S. Taxonomy of Educational Objectives, Handbook 1, Cognitive Domain. New York: Longmans, 1956.

Guilford, J. P. The Nature of Human Intelligence. New York: McGraw-Hill, 1967.

The Multi-Talent Program. Contemporary Curriculums, Oak Lawn, Illinois, 1972.

Williams, Frank E. A Total Creativity Program for Individualizing and Humanizing the Learning Process. Englewood Cliffs, N. J.: Educational Technology Publications, 1972.

(Sample List of Cognitive Needs)

Critical Thinking Skills

... ability to determine cause-effect relationships
... ability to categorize ideas
... ability to hypothesize
... ability to select pertinent information
... ability to make judgments

Creative Thinking Skills

... fluent thinking
... original thinking
... associative thinking
... flexible thinking

Examining the Plot of Land
Water Reservoir
Talent Pool
Sand
Building Sites
Student Processes
Clay
Road
Student Outcomes
Financial Resources
Philosophy
Support Groups
Support groups

Examining Your Philosophy

The philosophy is the road on which the architectural team and the contractor must travel to build a strong foundation and to erect a suitable building to meet the needs of gifted and talented students. The roadbed should be laid upon strong principles and firm knowledge and understanding of the needs of gifted and talented children. The philosophy gives direction to all those involved in the design of curriculum.

(A Sample Philosophy)

Our program for the gifted and talented is based upon a continued commitment to foster the full development of human potential. We recognize that the gifted possess extraordinary abilities to think creatively and critically and that their cognitive and affective needs can best be met by provision of a differentiated learning environment. Such an environment should encourage the gifted to explore their own interests, to allow them to select their own learning experiences, and to develop and use their creative and critical thinking abilities. Gifted and talented students should have the opportunity to interact with and be stimulated by their intellectual peers on a regular basis without isolating them completely from the regular school program. The focus of the curriculum will be future-oriented, providing those skills which will enable students to function effectively in the future.

Defining the Implication of the Philosophy

The contractor should examine the philosophy of the program and define specific implications for the development of a differentiated curriculum.

(Implications Based Upon the Sample Philosophy)

... defines a gifted and talented person as one who possesses the ability to think both critically and creatively

... implies the need for listing specific creative and critical thinking skills to be developed

... defines the parameters for multi-criteria selection procedures using measures that identify the ability to think critically and creatively

... implies a semi-separated administrative design

... implies a program that is carefully articulated with the regular school program

... implies that the curriculum will be flexible and constantly changing to meet the needs of individuals

... implies an on-going process of curriculum development

... implies the development of a total curriculum structure as opposed to the adaptation of commercial materials

... implies that the curriculum will provide for interaction, either formal or informal

... implies that the curriculum will be student-centered, allowing for differing learning styles

... implies that the major role of the contractor, the teacher, is that of curriculum developer

... implies that the students themselves are subcontractors

... implies that class size will be limited in order for the teacher to meet the needs of individual students

... implies that there will be a balance between process and products

... defines the materials and resources needed

Looking at the Identified Gifted Population

The contractor should examine all the information compiled about each student who will be entering the program in order to list specific implications for curriculum development.

(Sample Questions That May be Asked by the Contractor)

... Do there seem to be common interests among students?

... Does one learning style seem to be prominent?

... How much choice of activity must be provided to allow and encourage students to choose their own learning experiences?

... What activities should be planned around the revealed strengths of students?

... What activities should be provided to meet the revealed problems of students?

... How can a balance of activities be planned that will provide for both cognitive and affective needs?

... How can a balance of activities be planned that will provide for the development of skills as well as the learning of knowledge?

... Will reading level be a problem?

... Will there be a need to seek out special human or material resources to meet special needs?

... What special provision must be made for those students who may have motivational problems?

... What is the best way to help each child become an independent learner?

... Is there any additional information needed about any child?

Locating Raw Materials

Water, clay, and sand (sources of knowledge) are located throughout the plot of land and often can be found beyond its boundaries. These resources, both human and material, are available to all curriculum builders within the community. In the making of bricks (instructional activities) it is important that the contractor gather water and clay from many sources so as to ensure a variety of learning experiences for each child.

(A Sample List of Resources Available on a Plot of Land)

- information retrieval system
- an archeological site
- list of student processes
- list of student outcomes
- World Future Society
- museums
- architectural firm
- supermarket
- Department of Public Works
- a university
- a new solar home
- school media center
- television station
- the Yellow Pages
- ham radio club
- computer laboratory
- lumber yard
- public library
- bookstore
- recreation center
- local factories
- newspapers
- local craftsmen
- planetarium
- building contractor
- local planning board
- a building site
- catalogues
- bank
- high school students
- the sea, woods, or lake
- restaurant
- art supply store
- parents

Collecting Student Processes

Among the materials to be gathered should be an ample supply of processes from which to select during the brickmaking procedure. These exist in a variety of areas. Brainstorm a long list for later use.

(Sample List of Student Processes)

accentuate
account for
act out
add
advertise
analyze
arrange
assess
attend to
augment
become
brainstorm
build
categorize
challenge
choose
classify
collect
compile
compare
complete
compose
confer with
confirm
confront
construct
contrast
correlate
create
cut
debate
decide
defer
demonstrate
describe
design
destroy
differentiate
discover
discuss
display
diverge
divide
do
dramatize
draw
direct
elaborate
eliminate
estimate
exchange
expand
experiment
explain
explore
express
evaluate
feel
find
formulate
get
give
guess
highlight
hypothesize
identify
illustrate
improve
inquire
interact
interpret
interview
judge
justify
label
lay out
list
listen
look
make
match
measure
name
number
observe
organize
overhaul
outline
paint
pantomime
perceive
plan
play
produce
propose
prove
put together
question
read
record
reduce
refine
refute
relate
report
research
restore
review
search
select
share
show
sing
smell
solve
speak
speculate
stimulate
study
summarize
take apart
talk about
taste
tell
think up
try
use
write

Collecting Student Outcomes

Collect an ample supply of student outcomes to use later in the brickmaking process.

(Sample List of Student Outcomes)

adventure
advertisement
autobiography
banner
biography
booklist
blueprint
book report
brochure
building
calendar
catalogue
characterization
chart
cartoon
chart story
collection
coloring book
comparison
construction
creative writing
crossword puzzle
debate
demonstration
description
design
diagram
dialogue
dictionary
diarama
discussion
display
dramatization
drawing
experiment
flow chart
future wheel
game
graph
habitat
Hall of Fame
hypothesis
idea
illustration
interview
lesson
letter
list
map
mask
mobile
model
mosaic
mural
newspaper
notebook
object
observation
outline
painting
pantomime
paper mache
pattern
picture
picture dictionary
play
plan
poem
poster
prototype
puppet
puzzle
question
report
research
scenario
scrapbook
scroll
sculpture
sequence story
skit
solution
song
speech
story
story problem
story telling
structure
tape recording
time line
weaving

Involving Your Faculty and the Administration

A major role of the contractor is to ensure healthy relationships with the professionals whose support is necessary for the success of a gifted and talented program. Without the cooperation of faculty and the administrative staff, gifted students may find themselves being penalized for being different, for being selected to participate in a special program. The key to articulation is involvement. The more your faculty and administration become active partners in the learning process for gifted students, the greater will be the success of the program.

(A Sample List of Ways the Faculty and Administration Can Become Involved)

... Minimize destructive competition between different aspects of the gifted child's total program

... With assistance of the contractor, provide follow-up activities for use in the regular classroom

... Cooperate with student-initiated projects

... Conduct mini-courses or teaching lessons in special areas of interest and expertise

... Continue to provide observations on learning and behavioral characteristics of gifted children

... Share information about special conditions which may be affecting the child's learning

... Arrange joint parent-teacher conferences

... Provide material resources not readily available in the school

... Assist in the arrangement of flexible scheduling

... Express interest and concern in student interests

... Interpret the program favorably to parents and students

... Understand the rationale and philosophy of the program

Involving Parents and People in the Community

Parents of the gifted, often afraid of charges of elitism and special privilege, may shy away from acknowledging their child's gifts and may not volunteer to participate in the program. Community people are often unaware that their help would be welcomed. Once the community is fully informed concerning the philosophy and goals of the program, and are actively encouraged to become a part of the differentiated learning environment, these people will become your most active advocates.

(A Sample List of the Ways Parents and Community People Become Involved)

... See themselves as learning partners in helping each child reach his/her full potential

... Serve as mentors in helping individual children

... Serve as advocates in the community

... Make school board members aware of their continued support of the program

... Provide material resources not readily available within the school

... Assist in the classroom or resource room

... Offer to conduct mini-courses in special areas of interest

... Provide special assistance in technical areas (costume making, carpentry, rocketry, etc.)

... Provide transportation for small group excursions

... Make contacts in business or community organizations

... Assist in the publication of a news letter

... Assist in distributing questionnaires to locate community resources

Allocating Your Financial Resources

The contractor needs to know how much money is available to use for curriculum building purposes. Find out how the financial resources for your program have been allocated.

(How Much Money is Available?)

_____ for salaries (professional)

_____ for salaries (paraprofessional)

_____ for transportation

_____ for field trips

_____ for books and software

_____ for audiovisual materials

_____ for classroom supplies

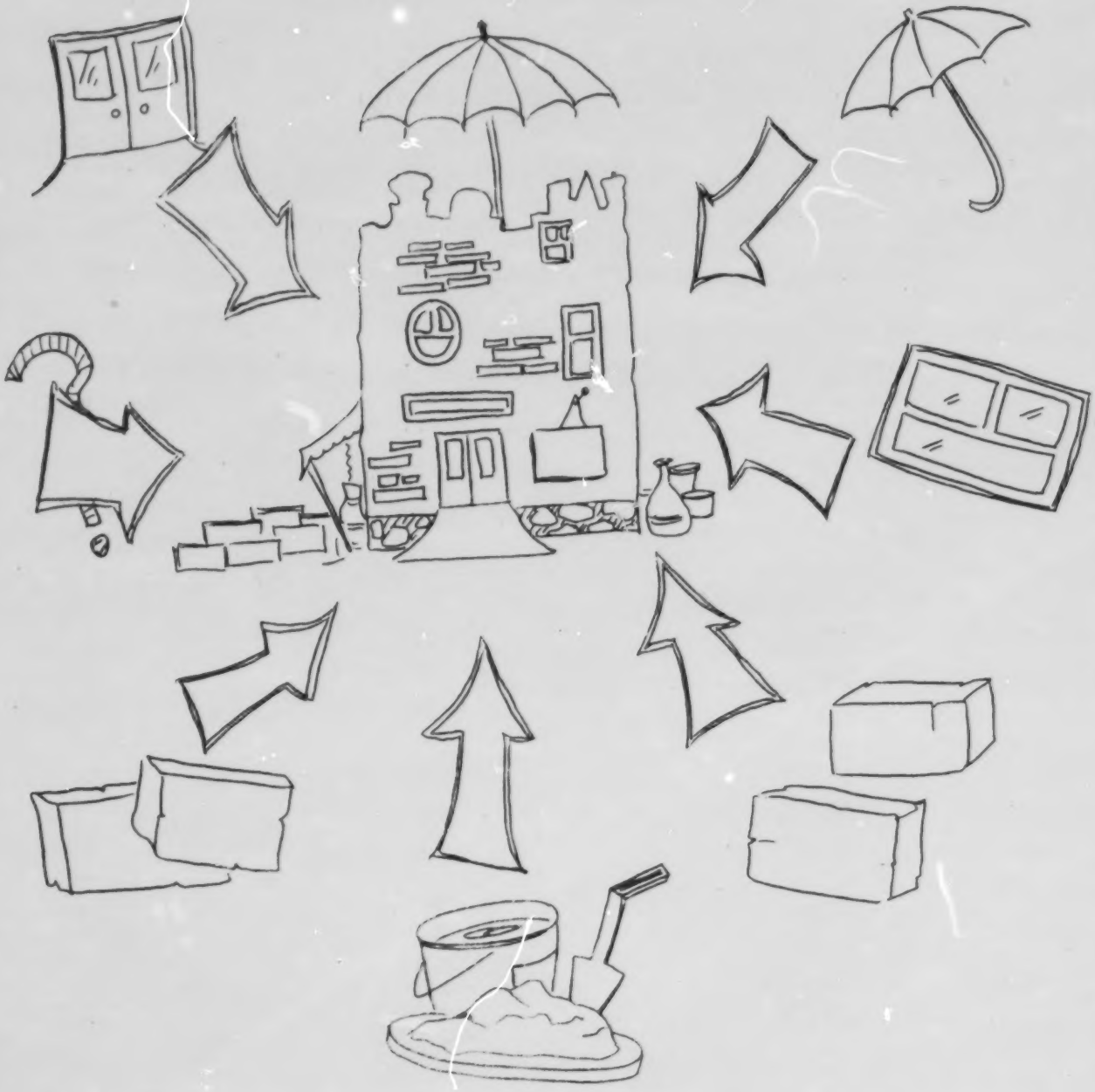
_____ for other materials

_____ for consultative services

_____ for resource personnel

_____ for in-service training

Examine the Principles on Which the Blueprint is Designed



Examining the Principles of This Blueprint

This prototype for the building of a differentiated learning environment is based upon the following principles:

... Creative and critical thinking can be encouraged and developed.

... The major function of a differentiated learning environment for the gifted and talented is to develop individuals who have internalized the creative process.

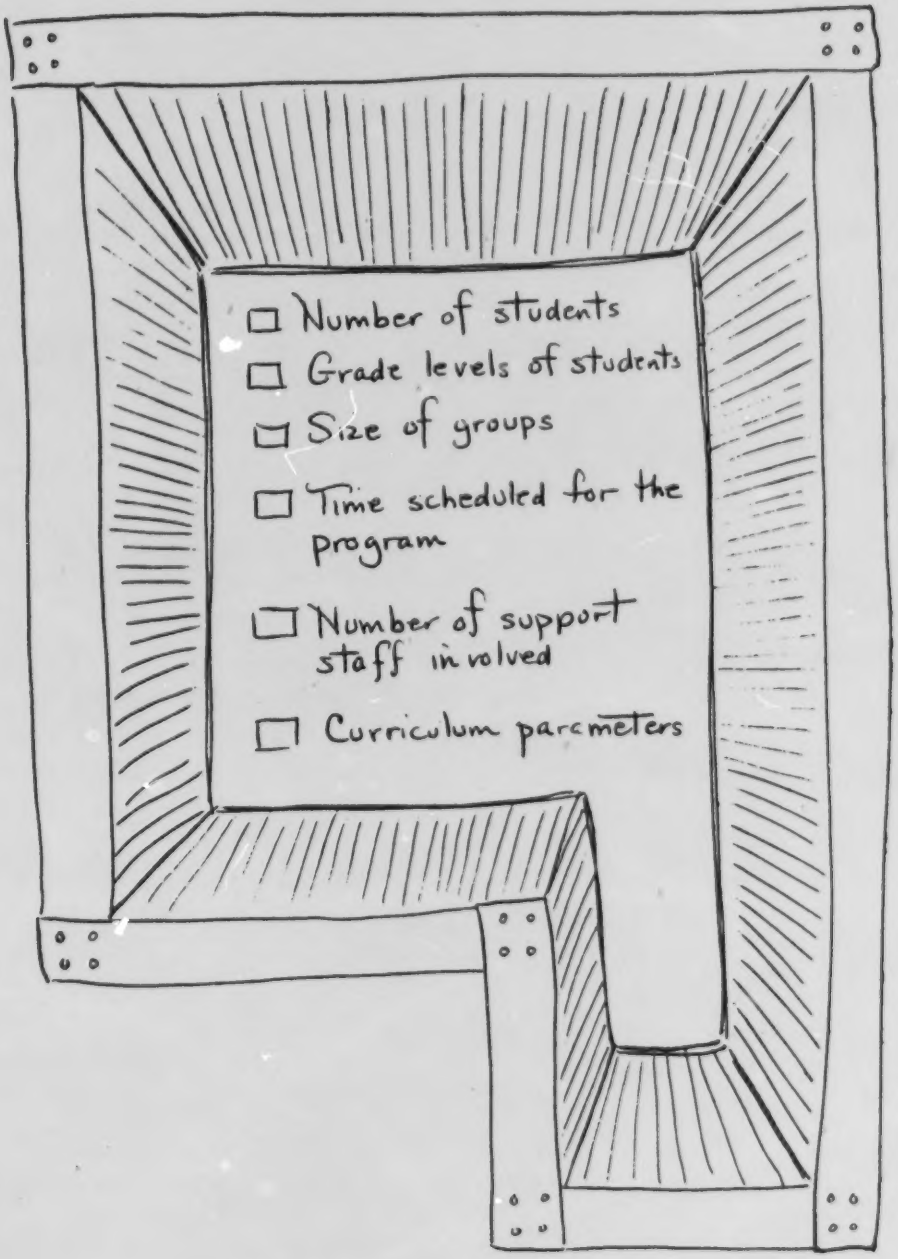
... The teacher must internalize the creative process before he or she can encourage and develop the process with students.

... Curriculum construction for the gifted and talented must be an on-going process.

... This prototype will assist in the development of curriculum for students who possess the abilities to think both creatively and critically.

... A curriculum for the gifted and talented should provide for a balance between process and product.

Examining the Foundation



Your Administrative Design

The administrative design for a program for the gifted and talented serves as the foundation for curriculum building. Ideally, the contractor should be an active member of the architectural team that chooses the site and prepares the foundation.

(Sample Administrative Design)

Number of students:	50
Grade levels of students:	fourth and fifth
Size of student groups:	10 (both fourth and fifth grade students in every group)
Number of schools participating:	12
Number of gifted centers:	5
Time scheduled for program:	Two 1½ hour periods per week at each of the five (5) centers
Number of staff involved:	1 full-time itinerant teacher of the gifted
Transportation/travel:	Approximately 40% of the students are transported from their own schools to the gifted centers. The teacher travels between the five (5) centers
Type of giftedness identified:	Those children who possess both critical and creative thinking abilities
Curriculum parameters:	Future Studies

Defining the Implications of Your Administrative Design

The nature of the foundation will determine the type of building that will be erected; thus, the kind of differentiated learning environment established will depend a great on the administrative design of the program. A sample list of some of the implications of the design follows:

... determines the amount of time students may spend on activities, either in class or outside of school time

... determines the extent to which continuity can be provided

... determines the amount of time the contractor will have to develop materials (i.e. lapse of time between sessions, amount of planning time provided)

... determines the extent to which the contractor must provide for articulation with the regular school program

... determines the type of instructional methods used

... has an effect on the ways affective needs will be met

... determines the extent to which various materials and resources may be utilized

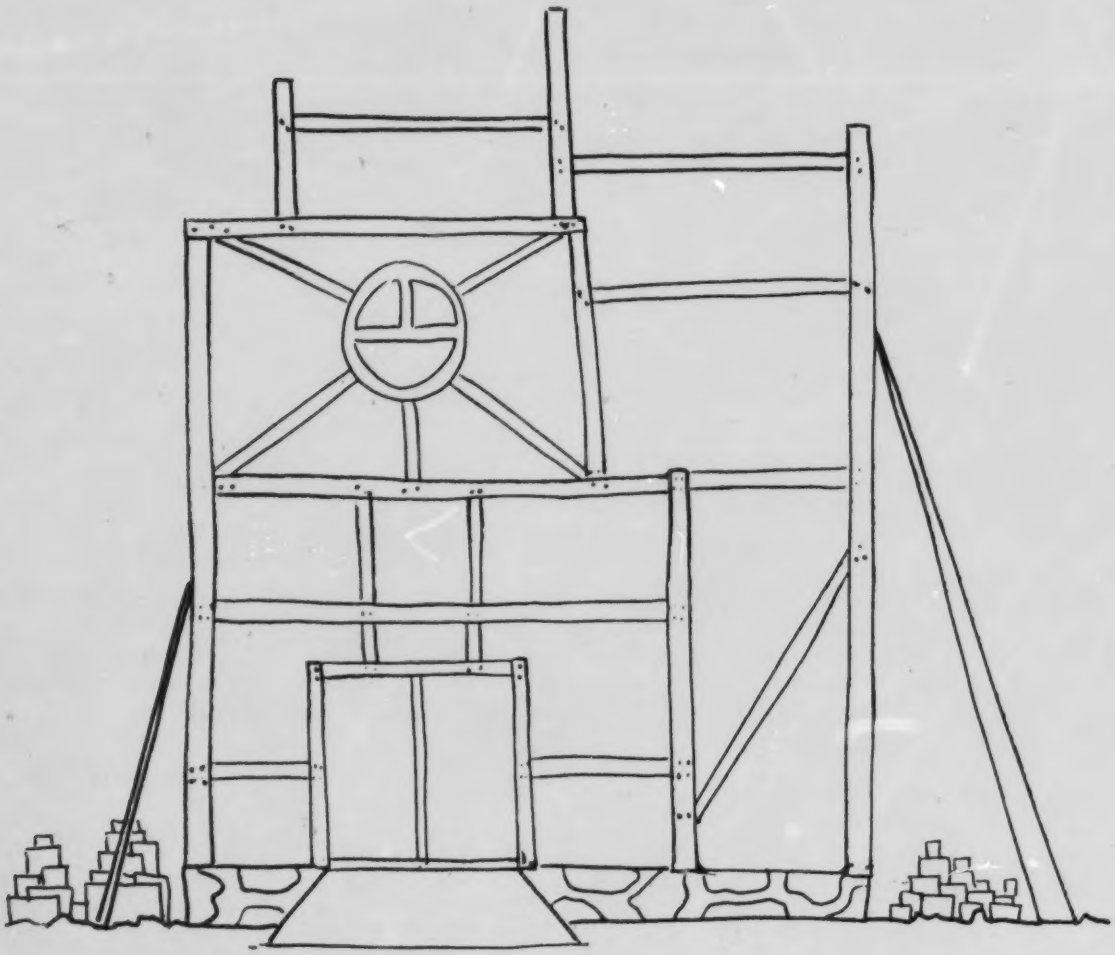
... determines the number and kind of field explorations which may be scheduled

... determines the kind of physical environment which may be created

... determines the content or knowledge base which should be chosen for a special curriculum

... determines the process skills and the amount of autonomy that may be developed in the students

Planning and Building the Framework



Planning the Framework for Building

(A Sample Framework Planned by a Contractor)

1. Seek and explore water resources (knowledge) dictated by the philosophy. (Future Studies)

2. Create content objectives.

    a. Brainstorm areas of exploration.
    b. Select areas of exploration.
    c. Seek and explore water resources related to specific selected area of exploration.
    d. Brainstorm concept areas.
    e. Select major content objectives.

3. Create goals.

    a. Brainstorm goals that can be explored.
    b. Select specific goals to be explored for each content objective.

4. Plan the unit framework.

    a. Examine time parameters.
    b. Select key resources as they relate to specific goals.
    c. Order the content objectives in the order by time in which they will be presented.
    d. Define the building process to be used in ordering the process skills.
    e. Select and order the process skills.
    f. List cognitive skill objectives.
    g. Relate the cognitive objectives to the creative process you have defined.
    h. Develop questioning patterns for cognitive skills.
    i. Order cognitive skill objectives as dictated by the creative building process you have defined.

Seek and Explore Water Resources - Category: Future Studies

Books:

Ackoff, Russell, Redesigning the Future. N. Y.: Wiley, 1974.
Berry, Adrian. The Next Ten Thousand Years - A Vision of Man's Future in the Universe. N. Y.: Mentor, 1974.
Cornish, Edward (Ed.) et al. The Study of the Future - An Introduction to the Art and Science of Understanding and Shaping Tomorrow's World. Washington, D. C.: World Future Society, 1977.
Fuller, R. Buckminster. Operating Manual for Spaceship Earth. N. Y.: Pocket Books, 1974.
Goldstein, Kenneth K. The World of Tomorrow. N. Y.: McGraw-Hill, 1969.
Halacy, D.S. Jr. Century 21 - Your Life in the Year 2001 and Beyond. Philadelphia: Macrae Smith, 1968.
Halacy, D.S. Jr. Your City Tomorrow. N. Y.: Four Winds, 1973.
Kahn, Herman, et al. The Next 200 Years - A Scenario for America and the World. N. Y.: Morrow, 1976.
Kahn, Herman & Bruce-Briggs, B. Things to Come - Thinking About the 70's and 80's. N. Y.: Macmillan, 1972.
Laconte, Ronald T. Teaching Tomorrow Today - A Guide to Futuristics. N. Y.: Bantam, 1975.
McHale, John. The Future of the Future. N. Y.: Ballantine, 1969.
Pulliam, John D., & Bowman, Jim R. Educational Futurism - In Pursuance of Survival. Norman, Oklahoma: University of Oklahoma Press, 1974.
Rosen, Stephen. Future Facts. N. Y.: Simon & Schuster, 1976.
Theobald, Robert. An Alternative Future for America's Third Century. Chicago, Illinois: Swallow, 1976.
Theobald, Robert. Beyond Despair - Directions for America's Third Century. Washington, D. C.: New Republic Book Co., 1976.
Theobald, Robert. Futures Conditional. Indianapolis, Indiana: Bobbs-Merrill, 1972.
Toffler, Alvin. Future Shock. N. Y.: Random House, 1970.
Toffler, Alvin, (Ed.) Learning For Tomorrow - The Role of the Future in Education. N. Y.: Random House, 1974.
Watson, Jane Werner. Living Together in Tomorrow's World. N. Y.: Abelard-Schuman, 1976.
Watson, Jane Werner. Toward a Better Environment for Our World Tomorrow. N. Y.: Golden Press, 1973.
World Future Society. The Future: A Guide to Information Sources. Washington, D. C.: World Future Society, 1977.

Magazines and Journals:

Futures Conditional, Northwest Regional Foundation, Spokane, Washington.
Futures Information Interchange, Future Studies Program, School of Education, University of Massachusetts, Amherst, Mass.
The Futurist, World Future Society, Washington, D.C.

Films:

Cities: Living in a Machine. 24 min., color, Document Assoc., 1971.
Cities of the Future. 25 min., color, McGraw-Hill, 1968.
Futurists. 25 min., color, McGraw-Hill, 1967.

Computer Search: Educational Futures. (Printout containing ERIC documents, monographs, journals, etc.)

Brainstorm Areas of Exploration

Brainstorm all the large areas of exploration which you might wish to consider in building a curriculum about the future (as dictated by the philosophy). Ideally, subcontractors should become involved at this level.

(Sample List of Areas of Exploration Obtained Through Brainstorming)

- energy
- food
- buildings
- leisure
- life-style
- economy
- government
- politics
- sex roles
- dreams
- communication
- careers
- health
- machines
- clothing
- technology
- travel
- space
- security
- drugs
- education
- welfare
- drama
- weather
- war?
- identity
- human nature
- psychology
- ecology
- pollution
- sports
- recreation
- crime
- music
- religion
- creative arts
- philosophy
- justice
- medicine
- death
- science
- mental health

Select the Areas of Exploration

A number of variables will influence the contractor's choice of an area for exploration. The selection process may depend upon any of the following:

... interest of the students involved in the program

... interest of the teachers involved in the program

... available resources, human and material

... potential for intellectual challenge

... potential for new exposure experiences

... complexity of the concepts involved

... time needed to develop the unit

... values of students, teachers, and community

... what is worth knowing

... restraints imposed by administration

... timeliness

... potential expense involved

... potential for fun and creativity

... need for knowledge in the area

... potential for new viewpoints

... curiosity

... past student experiences

... grade levels of the students involved

(Sample Area Selected)

LEISURE BUILDINGS

Seek and Explore Water Resources Related to Specific Selected Area of Exploration - Category: Leisure

Books:

Best, Fred, (Ed.) The Future of Work. N. Y.: Prentice Hall, 1973.

Brightbill, Charles K. The Challenge of Leisure. Englewood Cliffs, N. J.: Prentice Hall, 1960.

Costellow, Shellie, et al. Funspots - Places To Go With Children In and Around Connecticut. Hartford, Connecticut: Knight Hall Scholarship Fund, 1973.

Dumazedier, Joffre. Toward A Society of Leisure. N. Y.: Free Press, 1967.

Green, Thomas F. Work, Leisure and the American Schools. N. Y.: Random House, 1968.

Jury, Mark. Playtime! Americans At Leisure. N. Y.: Harcourt, 1977.

Larrabee, Eric, (Ed.) Mass Leisure. Glencoe, Illinois: Free Press, 1958.

Lobsenz, Norman M. Is Anybody Happy? - A Study of the American Search for Pleasure. N. Y.: Doubleday, 1962.

Miller, Norman P. & Robinson, Duane M. The Leisure Age - Its Challenge To Recreation. Belmont, California: Wadsworth, 1963.

Smigel, Erwin O., (Ed.) Work and Leisure - A Contemporary Social Problem. New Haven, Connecticut. College and University Press, 1963.

Snyder, Zilpha Keatley. Today Is Saturday. N. Y.: Atheneum, 1969.

Magazines and Journals:

Life-Styles Tomorrow. World Future Society, Washington, D. C.

Seek and Explore Water Resources Related to Specific Selected Exploration - Category: Buildings

Books:

Adkins, Jan. The Art and Industry of Sand Castles. N. Y.: Walker, 1971.

Beck, Barbara L. The First Books of Palaces. N. Y.: Watts, 1964.

Bergere, Thea & Richard. From Stones to Skyscrapers. N. Y.: Dodd, Mead, 1960.

D'Amato, Janet & Alex. Cardboard Carpentry. Toronto: The Lion Press, 1966.

Dattner, Richard. Design For Play. Cambridge, Massachusetts: MIT Press, 1969.

Davies, Rita. Let's Build. N. Y.: Van Nostrand Reinhold, 1974.

Downer, Marion. Discovering Design. N. Y.: Lothrop, Lee & Shepard, 1947.

Downer, Marion. Roofs Over America. N. Y.: Lothrop, Lee & Shepard, 1967.

Golding, Morton J. Bridges. N. Y.: Putnam, 1967.

Halmi, Robert. Zoos of the World. N. Y.: Four Winds, 1975.

Hiller, Carl E. Babylon to Brasilia - The Challenge of City Planning. Boston: Little Brown, 1972.

Hutchins, Pat. Changes, Changes. N. Y.: Collier, 1971.

Konigsburg, E. L. From the Mixed Up Files of Mrs. Basil E. Frankweiler. N. Y.: Atheneum, 1967.

Lewis, Stephen. Zoo City. N. Y.: Greenwillow (Morrow), 1976.

Linn, Charles F. The Golden Mean - Mathematics and the Fine Arts. N. Y.: Doubleday, 1974.

McHargue, Georgess. Funny Bananas - The Mystery in the Museum. N. Y.: Dell, 1975.

Miller, Barry. Alphabet World. N. Y.: Macmillan, 1971.

Mills, John Fitzmaurice. Treasure Keepers. N. Y.: Doubleday, 1973.

Sullivan, George, How Do They Build It?. Philadelphia: Westminster, 1972.

Sullivan, George. The New World of Construction Engineering. N. Y.: Dodd, Mead, 1968.

Webster, David. Towers - With 29 Mystery Photographs. Garden City, N. Y.: Natural History Press, 1971.

Wilson, Forrest. What It Feels Like To Be A Building. N. Y.: Doubleday, 1969.

Films:

At Home, 2001. 25 min., color, McGraw-Hill, 1967.

Mega-Building: Giants Cast Long Shadows. 22 min., color, Document, 1973.

People:

Staff, The Childrens' Museum, Boston, Massachusetts.

Seek and Explore Resources Related to Specific Selected Area of Exploration - Category: Architecture/Architects

Books:

Andrews, Wayne. Architecture in Chicago and Mid-America - A Photographic History. N. Y.: Harper & Row, 1973.

Andrews, Wayne. Architecture in New England - A Photographic History. Brattleboro, Vermont: Stephen Greene, 1973.

Andrews, Wayne. Architecture in New York - A Photographic History. N. Y.: Harper & Row, 1973.

Banham, Reyner. Age of the Masters - A Personal View of Modern Architecture. N. Y.: Harper & Row, 1975.

Canty, Donald J. Architecture. New Brunswick, N. J.: Boy Scouts of America, 1966.

Cook, John W., & Klotz, Heinrich. Conversations With Architects. N. Y.: Praeger, 1973.

Coughlan, Robert. The World of Michelangelo 1475-1564. N. Y.: Time, 1966.

Forsee, Aylesa. Frank Lloyd Wright - Rebel In Concrete. Philadelphia: Macrae Smith, 1959.

Forsee, Aylesa. Men of Modern Architecture - Giants in Glass, Steel and Stone. Philadelphia: Macrae Smith, 1966.

Goldreich, Gloria & Esther. What Can She Be? An Architect. N. Y.: Lothrop, Lee & Shepard, 1974.

Hiller, Carl E. From Teepees to Towers - A Photographic History of American Architecture. Boston: Little Brown, 1967.

Hillyer, Virgil. Architecture: Gothic-Modern. N. Y.: Merideth Press, 1966.

Jencks, Charles. Modern Movements in Architecture. Garden City, N. Y.: Anchor/Doubleday, 1973.

Mackertich, Tony & Peter. Facade - A Decade of British and American Commercial Architecture. N. Y.: Stonehill, 1976.

McHale, John. R. Buckminster Fuller. N. Y.: Braziller, 1962.

Myller, Rolf. From Idea To House. N.Y.: Atheneum, 1974.

Paine, Roberta M. Looking At Architecture. N. Y.: Lothrop, Lee & Shepard, 1974.

Peter, John (Ed.) Masters of Modern Architecture. N. Y.: Bonanza (Crown, Braziller), 1958.

Raboff, Ernest. Michelangelo Buonarroti. N. Y.: Doubleday, 1971.

Rockwell, Anne. Filippo's Dome. N. Y.: Atheneum, 1967.

Rogers W. G. What's Up in Architecture - A Look at Modern Building. N. Y.: Harcourt, 1965.

Rosen, Sidney. Wizard of the Dome - R. Buckminster Fuller, Designer for the Future. Boston: Little Brown, 1969.

Scully, Vincent Jr. Modern Architecture. N. Y.: Braziller, 1967.

White, Norval. The Architecture Book. N. Y.: Knopf, 1976.

Wright, Frank Lloyd. The Future of Architecture. N. Y.: Bramhall House, Horizon Press, 1953.

Wright, Frank Lloyd. A Testament. N. Y.: Bramhall House, 1957.

Films:

Frank Lloyd Wright. 28 min., EBEC, 1958
How to Look at a City. 30 min., NET - Indiana University, 1964.
Monument to the Dream. 27 min., color, A.C.I., 1967.

People:

Two local architects

Brainstorm Concept Areas

Within the areas of exploration selected, the next step is to brainstorm all the general concept areas you may wish to search out and consider. Remember that the creative process of brainstorming may not yield a neat list!

(Sample list of concept areas obtained through brainstorming)

- effects of buildings on people
- effects of people on buildings
- effects of technology on buildings
- personalities of buildings
- messages that buildings convey
- life and death of buildings
- sounds, voices, and faces of buildings
- buildings as art forms
- potential uses of buildings
- aesthetics of architectural design
- role of the architect in the future
- examination of reasons behind types of buildings
- effect of climate on buildings
- buildings and their relationship to leisure-time activities
- social psychology of architecture
- mathematics of architectural design
- animals as architects
- effect of population on types of buildings built
- preservation and restoration of buildings
- anatomy of roofs
- impact of family patterns on buildings

Select Major Content Objectives

From the list of concept areas select and refine a list of content objectives to be used in building the curriculum.

(Sample List of Content Objectives)

1. A building is an art form.
2. There is a relationship between buildings and leisure-time activities.
3. Leisure buildings have effects on individuals and society.
4. Architects have effects on leisure buildings and society.
5. Buildings will serve as a resource for helping the individual create a more meaningful use of future leisure time.

Brainstorm Goals that Can be Explored

What is a facade?
What is a building?
What is leisure?
What is a leisure building?
Do buildings have personalities?
What do architects do?
What will buildings be like in the future?
What makes a building beautiful?
What makes a building ugly?
What makes a building a building?
Which is more important, function or form?
What effects do buildings have on people?
How can a building influence how you feel?
How can a building influence how you think?
What is the relation between buildings and art?
Are all buildings architecture?
What messages do buildings convey?
How do buildings convey messages?
How do buildings convey feelings?
Are all buildings shelters?
What makes an architect great?
For what purposes are different buildings used?
What will leisure buildings be like in the future?
Are all buildings beautiful?
Who decides which buildings are beautiful?
What can you tell about a culture from looking at a building?
How do buildings influence people?
How do buildings influence a society?
Are all buildings personal monuments to the architect?
How does a building reflect the spirit of a society or culture?
Should all the architecture in a country be of the same type?
How can a building predict the future?
What does an architect need to know to build a building?
How does an architect express himself or herself?
How does an architect express his or her ideas and feelings?
Is architecture an art or a science?
What does an architect do?
Should an architect reflect or change his/her society?
What leisure activities take place in buildings?
What building resources for leisure time will be needed in the future?
What kind of leisure buildings do you want to see exist in the future?
Do all countries or cultures have leisure buildings?
What would interplanetary leisure buildings be like?
How would our great-grandparents view the leisure buildings of today?
Who decides what buildings are built?

Brainstorm Goals that Can be Explored (continued)

What gives a building worth?
What gives a building unity?
How does one define leisure?
What is meaningful use of leisure time?
What effects have buildings had on peoples' thoughts?
On what basis does a person choose to be an architect?
Why aren't there more female architects?
What will the ideal leisure park of the future be like?
Who decides what buildings will be restored?
What is worthy leisure?
What buildings are worthy?
Can the average person influence what is built?
Should all cultures have the same types of buildings?
Do all good architects become famous?
What effects does politics have on the architect?
What effects does the economy of a country have on buildings?
What effects will the increase in population have on leisure buildings in the future?
What is the relation between cost and the quality of a building?
What is the role of an architect?
What is a blueprint?
What role will the architect have in the future?
Can building change people?
What functions do buildings perform?
What new materials will be available for building in the future?
Can buildings charge a culture?
What effects could architects have on the toy industry?
If all toys in the future were designed by architects, how would our lives be different?
What are architects like as people?
Which buildings are most beautiful to you?
What effects do building materials have on the type of building that can be built?
Where do architects get their ideas?
How would architects of the past view buildings of today?
Suppose you had the skills of a famous architect, how would you use them to better society?
How does a building provide an aesthetic experience?
How does an architect decide what type of building to build?
Why aren't most houses designed by architects?
How does a building tell you how it should be used?
How can less be more?
How do buildings view the neutron bomb?
Are buildings worth more than people?
Do buildings have a soul?
What functions do buildings perform?

Select Specific Goals to be Explored for Each Content Objective

(Sample Questions Which May be Explored in Each Content Objective)

1. A building is an art form.

   What makes a building beautiful?
   What functions do buildings perform?
   What gives a building unity?
   What gives a building worth?
   How do buildings convey messages?
   How do buildings convey feelings?
   How does a building reflect the spirit of a society or culture?

2. There is a relationship between buildings and leisure-time activities.

   What is a building?
   What is leisure?
   What is a leisure building?

3. Leisure buildings have effects on individuals and society.

   How can a building influence how you feel?
   How can a building influence how you think?
   How do buildings influence people?
   How do buildings influence a society?

4. Architects have effects on leisure buildings and society.

   How does an architect express himself or herself?
   How does an architect express his/her ideas and feelings?
   Should an architect reflect or change his/her society?

5. Buildings will serve as a resource for helping the individual create a more meaningful use of leisure time.

   What is a meaningful use of leisure time?
   What building resources for leisure time will be needed in the future?
   What kind of leisure buildings do you want to see exist in the future?

Examine Your Time Parameters

The contractor should examine the amount of time available as dictated by the administrative design.

(Sample Questions that May be Asked)

... How much time will be needed to explore the content goals you have defined?

... What will be the relationship between the time needed to accomplish these goals and the time allotted for the total program?

... How much time will be needed to allow for students to experience the creative process?

... How will student motivation and interest level affect the time allotted for the unit?

... How much time should be allotted for open-ended activities?

... How much time should students be expected to spend outside of regular class time or after school hours?

Planning a Unit Framework

Here is a sample framework for a ten (10) week unit of two (2) 1½ hour periods a week based on the sample administrative design.

Week	1½ hour period	1½ hour period
1	session one	session two
2	session three	session four
3	session five	session six
4	session seven	session eight
5	session nine	session ten
6	session eleven	session twelve
7	session thirteen	session fourteen
8	session fifteen	session sixteen
9	session seventeen	session eighteen
10	session nineteen	session twenty

Select Key Resources

The contractor must now select key resources, sand and water, as they relate to specific content objectives.

WATER
(Sources to be used in making bricks)

1. A building is an art form.

   Wilson, Forrest. What It Feels Like To Be A Building. N. Y.: Doubleday, 1969

2. Leisure buildings have effects on individuals and society.

3. There is a relationship between buildings and leisure-time activities.

   Konigsburg, E.L. From the Mixed-Up Files of Mrs. Basil E. Frankweiler. N. Y.: Atheneum, 1967.

   McHargue, Georgess. Funny Bananas - The Mystery in the Museum. N. Y.: Dell, 1975

SAND
(Sources to be used in teaching content)

1. Leisure buildings have effects on individuals and society.

   Costello, Shellie, et al. Funspots - Places to Go With Children In and Around Connecticut. Hartford, Conn. Knight Hall Scholarship Fund, 1973

   The Children's Museum, Jamaica Plain, Boston, Massachusetts

2. Architects have effects on leisure buildings and society.

   Allen, Agens. The Story of Michelangelo. N. Y.: Roy Publishers (no date)

   Andrews, Wayne. Architecture in Chicago and Mid-America - A Photographic History. N. Y.: Harper & Row, 1973

   Coughlan, Robert. The World of Michelangelo. N. Y.: Time-Life, 1966

   Forsee, Aylesa. Frank Lloyd Wright - Rebel in Concrete. Philadelphia, Macrae Smith, 1959

Forsee, Aylesa. Men of Modern Architecture - Giants in Glass, Steel, and Stone. Philadelphia: Macrae Smith, 1966.

Jacobs, Herbert. Frank Lloyd Wright - America's Greatest Architect. N. Y.: Harcourt, 1965.

Peck, Anne Merriman. Wings of an Eagle, The Story of Michelangelo. N. Y.: Hawthorne, 1963.

Raboff, Ernest. Michelangelo Buonarroti. N. Y.: Doubleday

Rogers, W. G. What's Up in Architecture - A Look at Modern Building. N. Y.: Harcourt, 1965.

Rosen, Sidney. Wizard of the Dome - R. Buckminster Fuller, Designer for the Future. Boston: Little Brown, 1969.

Willard, Charlotte. Frank Lloyd Wright. N. Y.: MacMillan, 1972.

White, Norval. The Architecture Book. N. Y.: Knopf, 1976.

Wright, Frank Lloyd. The Future of Architecture. N. Y.: Horizon, 1953.

_____. A Testament. N. Y.: Bramhall House, 1957.

Selected pictures of buildings designed by the following architects:

Michelangelo Buonarroti
Le Corbusier (Charles-Edouard Jeanneret)
Walter Gropius
Ludwig Mies Van Der Rohe
Henry Hobson Richardson
Eero Saarinen
Louis H. Sullivan
Frank Lloyd Wright
Richard Buckminster Fuller

Local architects as resource speakers

Films:

Frank Lloyd Wright - 28 min., E.B.E.C. 1958
Futurists - 25 min., color, McGraw Hill, 1967

Order the Content Objectives

Order the content objectives into the unit framework.

Week	Content Objectives (Based on Sample List)
1	A building is an art form. (sessions 1 and 2)
2	There is a relationship between buildings and leisure-time activities. (sessions 3 and 4)
3	There is a relatior ship between buildings and leisure-time activities. (session 5) Leisure buildings have effects on individuals and society. (session 6)
4	Leisure buildings have effects on individuals and society. (sessions 7 and 8)
5	A building is an art form. Leisure buildings have effects on individuals. (session 9) Buildings will serve as a resource for helping the individual create more meaningful use of leisure time. (session 10)
6	Architects have effects on leisure buildings and society. (sessions 11 and 12)
7	Architects have effects on leisure buildings and society. (session 13) Buildings will serve as a resource for helping the individual create more meaningful use of leisure time. (session 14)
8	Buildings will serve as a resource. (session 15) A building is an art form. (session 16)
9	Buildings will serve as a resource. (session 17) Student Decision (session 18)

Define Your Building Process

The building process is to be used by a contractor is a crucial component of the development of a differentiated learning environment for the gifted and talented. A contractor must first define and then internalize the creative process himself before he can encourage and help the sub-contractors use the creative process themselves.

(A Sample Building Process)

1. Idea generation: the process of developing a large number of ideas

2. Idea selection and analysis: the process of examining those ideas critically

3. Idea finding/idea expansion: the process of acquiring new ideas or information

4. Original production: the process of arriving at new ideas using the total process above

Order the Building Process Skills

Order the creative process skills into the unit framework.

Week	Building Process Skills	
1	idea generation	idea selection and analysis
2	idea expansion	idea generation
3	idea analysis; original production	idea expansion
4	idea generation; idea selection and analysis	idea expansion
5	original production	idea finding
6	idea finding	idea expansion
7	idea expansion	original production
8	original production	idea generation
9	idea selection and analysis	idea generation; idea selection and analysis
10	original production	original production

List Cognitive Skill Objectives

The contractor should next review the cognitive needs determined earlier in the process. Those needs now become the cognitive skill objectives to be used in the creation of differentiated instructional strategies.

(Sample List of Cognitive Skill Objectives)

Critical Thinking Skill Objectives

1. to determine cause-effect relationships
2. to categorize ideas
3. to hypothesize
4. to select pertinent information
5. to make judgments

Creative Thinking Skill Objectives

6. fluency
7. originality
8. association
9. flexibility

Relate Cognitive Skill Objectives to the Building Process

Relate the cognitive skill objectives to the processes you will use in building the differentiated learning environment.

1. Idea generation

    - fluency
    - flexibility
    - association
    - originality

2. Idea selection and analysis

    - selecting pertinent information
    - determining cause-effect relationships
    - hypothesizing
    - categorizing ideas
    - making judgments

3. Idea expansion/idea finding

    - integration of all cognitive skills except originality

4. Original production

    - originality
    - internalization of all cognitive skills

Develop Questioning Patterns

A key step in the creation of differentiated learning activities is the development of questioning patterns for each cognitive objective. A sample list of questioning patterns follows:

1. Ability to determine cause-effect relationships

   A. What effect does _____ have on _____?
   (What effect will the development of low-cost solar energy have on homes of the future?)

   B. What are the consequences of _____?
   (What are the consequences of mass-produced housing?)

   C. What is the relationship between _____ and _____?
   (What is the relationship between the kind of materials available and the kind of building built?)

   D. What are the consequences of _____ on _____?
   (What are the consequences of increased use of solar energy on the building industry?)

   E. How does _____ influence _____?
   (How does climate influence the kind of shelter built?)

   F. How does _____ contribute to _____?
   (How does the building industry contribute to the nation's economy?)

   G. What caused _____?
   (What caused the invention of modular building construction?)

   H. List the major implications of _____.
   (List the major implications of high-rise living.)

2. Ability to categorize ideas

   A. What do _____ and _____ have in common?
   (What do buildings and machines have in common?)

   B. What are all the ways you could regroup _____?

   C. How will _____ and _____ be different?
   (How will homes of today and homes of the future be different?)

   D. Into what category do all these _____ (ideas, objects, actions, phrases) fit?
   (Into what category do all these buildings fit? museum, recreation center, motel, movie theatre)

E. What are all the ways _____ and _____ are different?
(What are all the ways houses and homes are different?)

3. Ability to hypothesize

A. What might be all the reasons for _____?
(What might be all the reasons for the growth of skyscrapers in our cities?)

B. What would happen if _____?
(What would happen if all new buildings in Hartford were limited to ten stories?)

C. What would happen if _____ and then _____?
(What would happen if we built lots of new housing developments in the suburbs and then the suburban population decreased?)

4. Ability to select pertinent information

A. In order to help solve the problem of _____, what _____ would you need?
(In order to help solve the problem of overpopulation, what buildings do you need?)

B. In order to _____, what _____ will you need?
(In order to complete your study of geodesic domes, what are all the questions you need answered?)

C. Given _____ and _____, how do you know which one to choose?
(Given an old restored house and a new house - both selling for the same price - how do you know which one to choose?)

D. In order to justify or defend _____, what _____ will you need?
(In order to justify your ideal design for a home for the future, what information about new materials, living styles, or family patterns will you need?)

E. What are all the reasons for _____?
(What are all the reasons for controlling building expansion in your community?)

F. What might be all the reasons for supporting or refuting this statement: _____?
(What might be all the reasons for supporting or refuting this statement: Private ownership of buildings will diminish in the future.)

5. Ability to make judgments (Incomplete statements for self-evaluation)

   A. If I could start over again I would ....

   B. I wish I could have ....

   C. My hardest job was ....

   D. I got the most help from ....

   E. The most unusual thing about my _____ is ....

   F. I feel proud of ....

   G. I am still puzzled by ....

6. Fluency

   A. What are all the different uses for _____?
   (What are all the different uses for the following buildings: game center, factory, house, temple?)

   B. What are all the different ways one could _____?
   (What are all the different ways you could alter your house to make it better for the future?)

   C. Make a list of all _____ that _____?
   (Make a list of all the labor-saving devices that you hope your kitchen of the future will have/won't have.)

7. Originality

   A. Design _____ which will _____.
   (Design and create a model toy town, one that could be played with like a doll house. Be clever. Make your town one that you hope will exist in the future.)

   B. Create a new _____ for the _____.
   (Create a new, unusual restaurant for the year 3000. Be wild! Keep in mind all the new foods that we will have.)

   C. Plan _____. Make it something no one has ever thought of before.
   (Plan an unusual buildings game. Make it a game that no one has ever thought of before.)

8. Association

A. How is a _____ like a _____?
(How is a building like a carousel?)

B. I only know about _____. Tell me about _____.
(I only know about bicycles. Tell me about buildings.)

C. Describe _____ _____. (paradox)
(Describe small bigness.)

D. Which is _____, a _____ or a _____?
(Which is stronger, a church/temple or a school? Why?)

9. Flexibility

A. Become _____. Tell how it feels to be _____.
(Become your favorite building. Tell how it feels to be this building.)

B. Tell how _____ would be viewed by _____.
(Tell how a modern building of 1977 would be viewed by a person living in 2077.)

C. Create the ideal _____.
(Create the ideal building for the future for sleeping, eating, playing, resting, or creating.)

D. What if _____?
(What if all buildings were the same?)

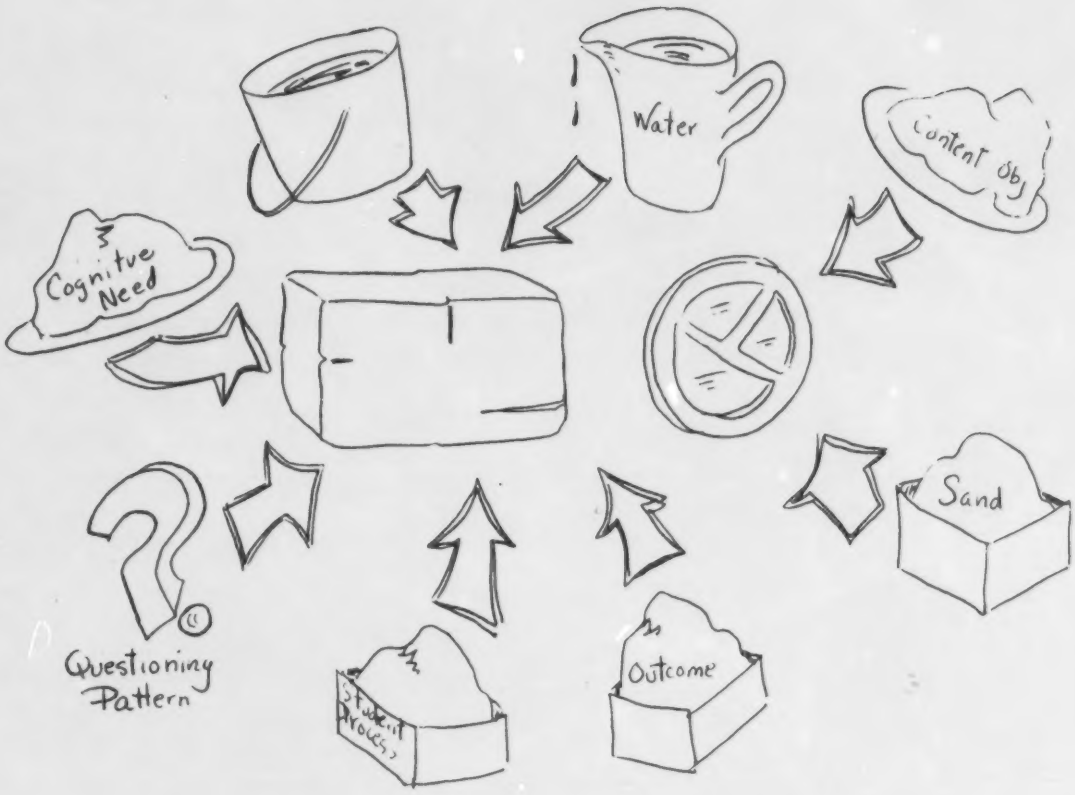
E. Just suppose _____.
(Just suppose you had only one building in which to spend the rest of your life. Create this building.)

Order Cognitive Skill Objectives

The contractor should next make a tentative plan for inclusion of the cognitive skill objectives within the framework of the unit. This becomes a process model.

Week	Process Model Based on Cognitive Skills	
1	fluency flexibility originality	ability to select pertinent information
2	originality	fluency flexibility originality association
3	all cognitive skills	fluency
4	all cognitive skills	flexibility
5	flexibility originality	
6	ability to select pertinent information	
7		originality
8	originality	originality flexibility
9	ability to make judgments	all cognitive skills
10	all cognitive skills	all cognitive skills

Creating Bricks and Windows



How To Create a Brick

Collect the raw materials

1. Select a content objective. (clay)
2. Select a water source. (if needed)
3. Select a questioning pattern based on cognitive skill.
4. Select a wall parameter. (if needed)
5. Select a student process.
6. Select a student outcome.

Use the materials in the firing process

(A Sample Brick)

1. Content objective: effect of buildings on individuals
2. Water source: From the Mixed-Up Files of Mrs. Basil E. Frankweiler
3. Cognitive skills: flexibility, originality
4. Questioning patterns: Become _____. Tell how it feels.
   Design _____.
5. Wall parameter: Heuristic habitat
6. Student process: design ...
7. Student outcome: brochure

The Final Brick

"Become the Metropolitan Museum of Art. Design a brochure that advertises how you influence the way your visitors feel or think as they discover your treasures."

Making More Bricks

Create as many bricks as are necessary to complete each wall. Continue the process until all walls are ready to meet the needs and interests of students. The walls will never be completed! There will always be room for student-initiated bricks.

How To Create a Window

Collect the raw materials

1. Select a content objective.
2. Collect some sand.
3. Select a window parameter. (if needed)
4. Select a student process.
5. Select a student outcome.

Use the materials in the firing process

(A Sample Window)

1. Content objective: Architects have effects on buildings and society.
2. Sand: Individual research folders on selected architects prepared by teacher
3. Window parameter: panel discussion
4. Student process: speak, tell, or share
5. Student outcome: verbal presentation of knowledge

The Final Casement Window

The student is able to answer the following three questions about a selected architect:

a. How did he get his ideas for the buildings?

b. What kinds of materials did he like to use? Why?

c. How would he define a beautiful building?

The student, therefore, is serving as a resource person to impart new information to other students.

Brainstorming Wall Parameters

Either before, during, or after the brick-making and windowmaking processes, the contractor should brainstorm all the different ways that bricks or windows could be put together to make imaginative walls.

(A Sample List Obtained Through Brainstorming)

- skill builder
- activity box
- source book
- learning packet
- an affective adventure
- group games
- organized discussion
- group interaction activity
- student demonstrations
- teacher presentation
- presentation by resource person
- independent project
- team project
- social/political action project
- creative artistic production
- musical drama
- brainstorming session
- list of creative activities for the teacher
- curiosity center
- heuristic habitat
- learning center
- field trip
- panel discussion
- association debate
- idea stations
- research stations (search stations)
- brickwork book
- collection of activities for creative thinking
- collection of activity cards
- an inductive lesson
- creative production

How To Create a Wall

Collect materials

1. Select bricks. (if needed)

2. Select windows. (if needed)

3. Select way(s) to put bricks together.

Model Wall (#1) A Collection of Activities for Creative Thinking

1. Brainstorm all the different kinds of buildings you can think of. (brick)

2. Design the facade (face) of a building that might express the feeling of success or tension. (brick)

3. Brainstorm all the feelings which you think buildings might have. Draw a building face to illustrate one of the feelings. (brick)

4. Become a building with your entire body. Pantomime any of the following buildings: (bricks)

a scary building	a building growing old
a delicious building	a lonely building
a bizarre building	an experimental building
a frustrated building	a building with hope for
a cynical building	the future

5. Think of a building. Think of something happening to that building. How does that building feel? Pantomime that building so that the rest may guess what is happening to the building. (brick)

6. Think of a building. Create a riddle about that building that will give clues so that others can guess its identity.

"My insides are full of treasures
From the near and ancient past,
Enjoy my gold and marble pleasures,
Come inside and have a blast!"

(a museum)
brick

7. With a partner create a conversation between two buildings selected from the initial brainstorming session. (brick)

(This wall becomes the first session in the unit.)

Model Wall (#2)

1. Brick selected: Design your own leisure game.

2. Window selected: Knowledge of the three categories of leisure-time activities.

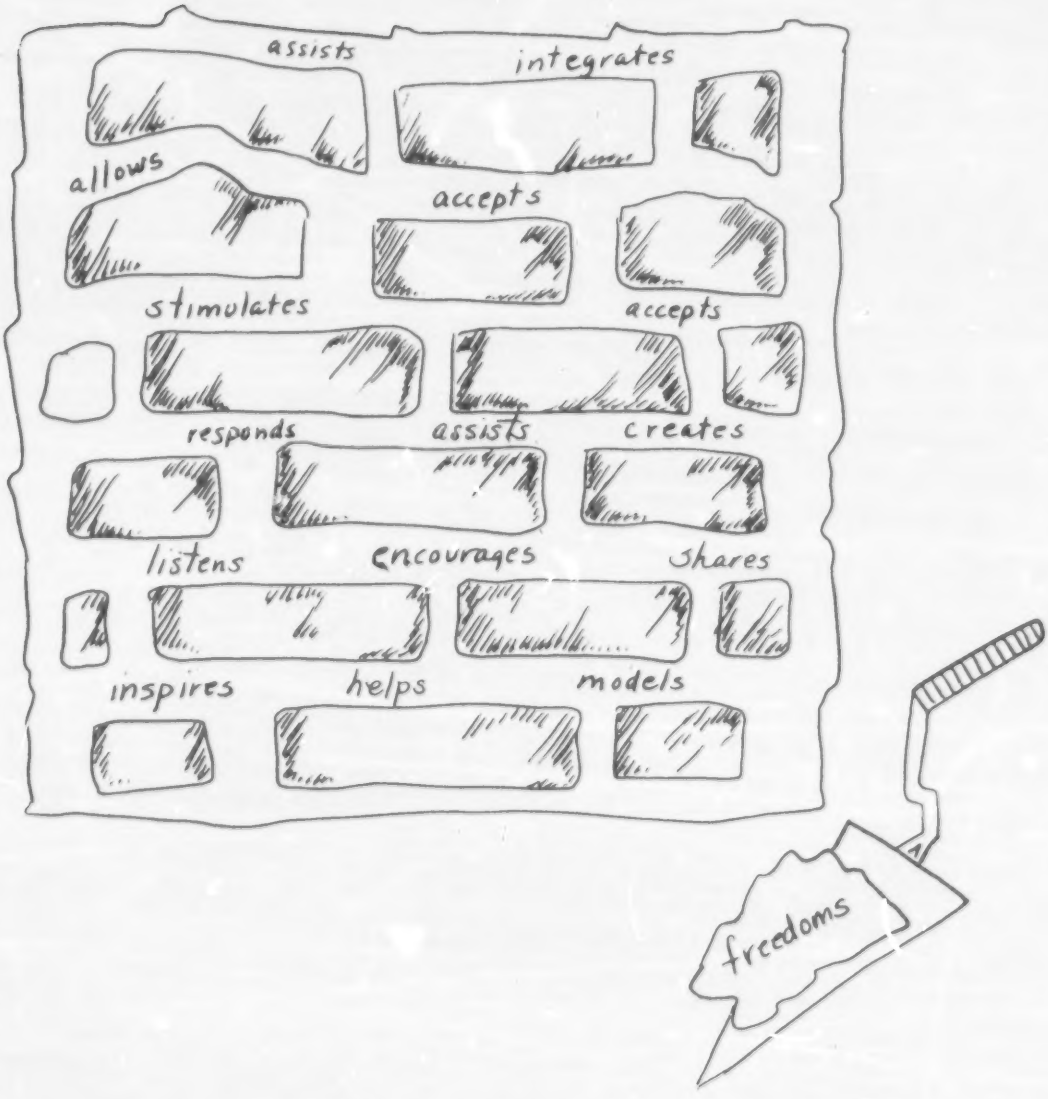
3. Way to put bricks and window together: Group game

(This wall becomes the third session in the unit.)

Getting Ready to Make Walls

Select collections of bricks and windows to make into walls. The walls selected should fit the unit framework planned.

Week	A Sample Collection of Walls	
1	Collection of Creative Activities	Inductive Lesson
2	Group Game	Collection of Creative Activities
3	Curiosity Centers	Introduction of Reading Activities
4	Heuristic Habitat Source Book	Creative Adventure
5	Creative Production	Idea Stations
6	Search Stations	Panel Discussion
7	Resource Presentation	Creative Production
8	Creative Production	Creative Production
9	Self-evaluation	Open-ended Adventure
10	Open-ended Adventure	Open-ended Adventure


Bricklaying
Skills
assists
integrates
allows
accepts
stimulates
accepts
responds
assists
creates
listens
encourages
shares
inspires
helps
models
freedoms

Bricklaying Skills

Bricklaying skills are affective and cognitive abilities possessed by the contractor and used by him/her in building the actual differentiated learning environment. These skills can be exercised only when the mortar of the subcontractors' affective needs is actually present, and as such they are the sine qua non of the differentiated learning environment.

(Selected Bricklaying Skills)

... encourages students to challenge ideas

... accepts students' divergent responses to questions

... encourages students to produce unusual solutions to problems

... encourages students to use their interests and talents as subcontractors

... inspires the students to use the creative process

... integrates synthesis and analysis skills

... stimulates students to seek out new resources for learning

... assists students in analyzing their own learning processes

... encourages students to make their own decisions and be responsible for the decisions made

... creates activities that allow students to play with ideas

... encourages students to defer judgement during the creative process

... encourages students to become independent learners

... creates a non-threatening environment which allows students to experience joy and pride in the learning process

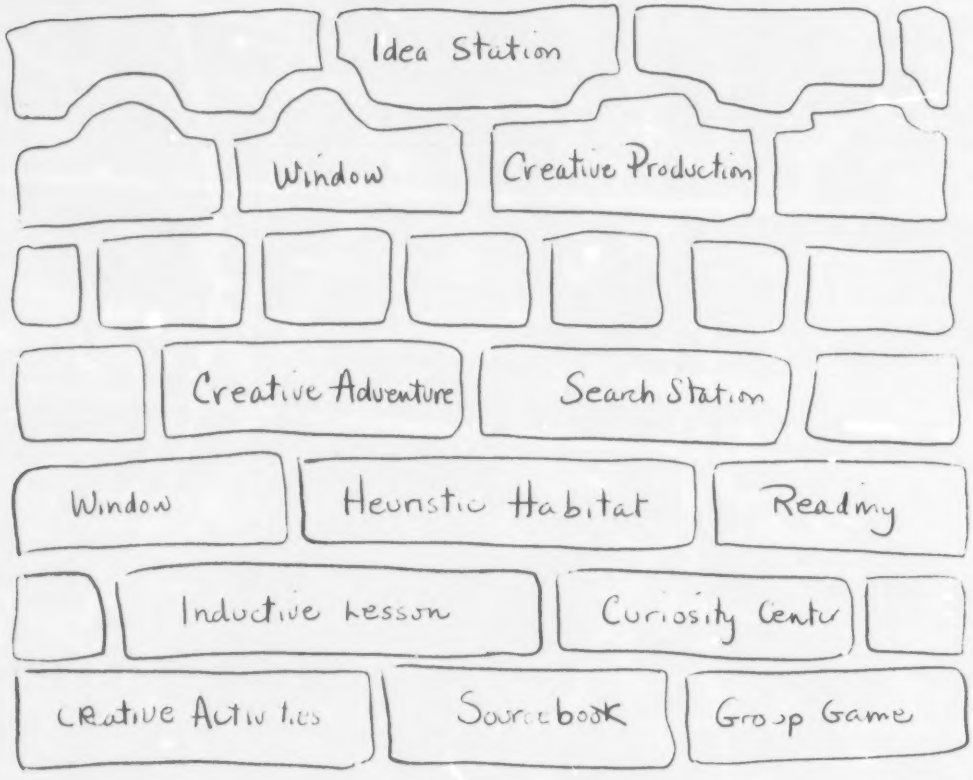
... models joy and pride in the creative process

... accepts and values each child's uniqueness

... allows instructional time for peer interaction

... encourages students to ask questions

A Sample Collection of Walls



Session One
(Collection of Creative Activities)

Brainstorming Buildings

1. With the students brainstorm all the different kinds of buildings they can think of. Ask a student to act as secretary and write each contribution on a slip of paper. Collect the papers in a suitable "hat" for later use in the session. (Fluency)

Buildings Express Feelings

2. Ask each child to design the facade (face) of a building that might express the feeling of success or the feeling of tension. (Flex.)

3. Ask the children to think of all the feelings which buildings might have. Again put all the ideas in a suitable "hat." Then each child may pick an idea from the "hat" and draw a building face to illustrate the feeling. (Flex.)

4. Group the children in a circle. Ask each child to become a building with his entire body and pantomime any of the following: (Flex.)

a scary building	a building growing old
a delicious building	a lonely building
a bizarre building	an experimental building
a frustrated building	a building with hope for
a cynical building	the future

5. Ask each child to think of a building. Then ask the child to think of something happening to that building. How does that building feel? Have each child pantomime his building for the rest of the group to guess. (Flex.)

Buildings Convey Messages

6. Ask each child to think of a building. Ask the child to create a riddle which will give clues so that the others can guess the identity of the building. (Flex.)

> "My insides are full of treasures
> From the near and ancient past,
> Enjoy my gold and marble pleasures,
> Come inside and have a blast!" (a museum)

7. Have the children pair off to create a conversation between buildings selected from the initial brainstorming session. Have them keep in mind all the previous experiences.

Session Two
(An Inductive Lesson)

The purpose of this less is to encourage the students to formulate their own definition of a building.

Preparation

1. Collect at least 25 pictures of various types of buildings from all over the world.
2. Display them all over the classroom so that students may view them easily and in random order.
3. Number each picture for ease in identification.
4. Distribute copies of the activity "Looking at Buildings" that follows.
5. Each student should identify by number a building that will answer each question.
6. Stress that there are no right or wrong answers! Each student may view each building in a different way.

Formulating a definition of a building

1. After the students have had sufficient time to look over the pictures and complete their question sheets, tell the students that they are going to write a definition of a building using some of the ideas they have just been thinking about.
2. Refer to content objectives and key questions for guidance.

LOOKING AT BUILDINGS

Directions: Look at all of the pictures of buildings. Choose a building to answer each question. Write the number of the building on the blank after each question.

WHICH BUILDING ...

... is the most beautiful? _____

... is the most influenced by its neighbors? _____

... shows on the outside what is happening on the inside _____

... is most like you? _____

... has the oldest ancestors? _____

... tells you a lot about the time when it was built? _____

... is the most daring? _____

... is made of the most unusual materials? _____

... uses its plot of land most effectively? _____

... would you most like to visit? _____

... encourages the most worthy use of leisure time? _____

... tells you the most about the architect who designed it? _____

... "gets it all together"? _____

... looks better than it tastes? _____

... looks as if it were designed by a woman? _____

... is the most "masculine"? _____

... is worth the most? _____

... looks like an imitation? _____

... is the most unusual? _____

... serves people's needs the most? _____

... do you wish you had designed? _____

Pick one building. What does the architect want you to think about this building?

Pick one building. What kind of architect designed that building?

Session Three

(Group Game - "Ideal Leisure Habitat 2001")

Introduction

"It is the year 2001. You find yourself in an Ideal Leisure Habitat in space. Only leisure is allowed in this colony. Your job is to cooperate with your team members to earn 'leisure points'."

Materials for Playing the Game

Game board depicting the Ideal Leisure Habitat
Game cards labeled RELAXATION, ENTERTAINMENT, PERSONAL DEVELOPMENT
Timer

Directions for Playing

1. The number of teams will depend on the number of children playing the game. Team members should select the order of players.

2. Arrange the game cards face down around the outer ring of the Habitat. The first player then selects any one of these cards. Each card has a leisure activity on it. The role of each player is to act out the activity without words. (Do not show the card to the other team members.) The other team members will try to guess the activity within a one-minute time limit. If the team members are able to guess the leisure time activity within one minute, the team scores the total number of points indicated on the card. If the team members are unable to guess the activity within one minute, 0 points are scored. When each turn is completed, the card is placed face down in the center of the Habitat on the category of leisure activity which matches the upper side of the card.

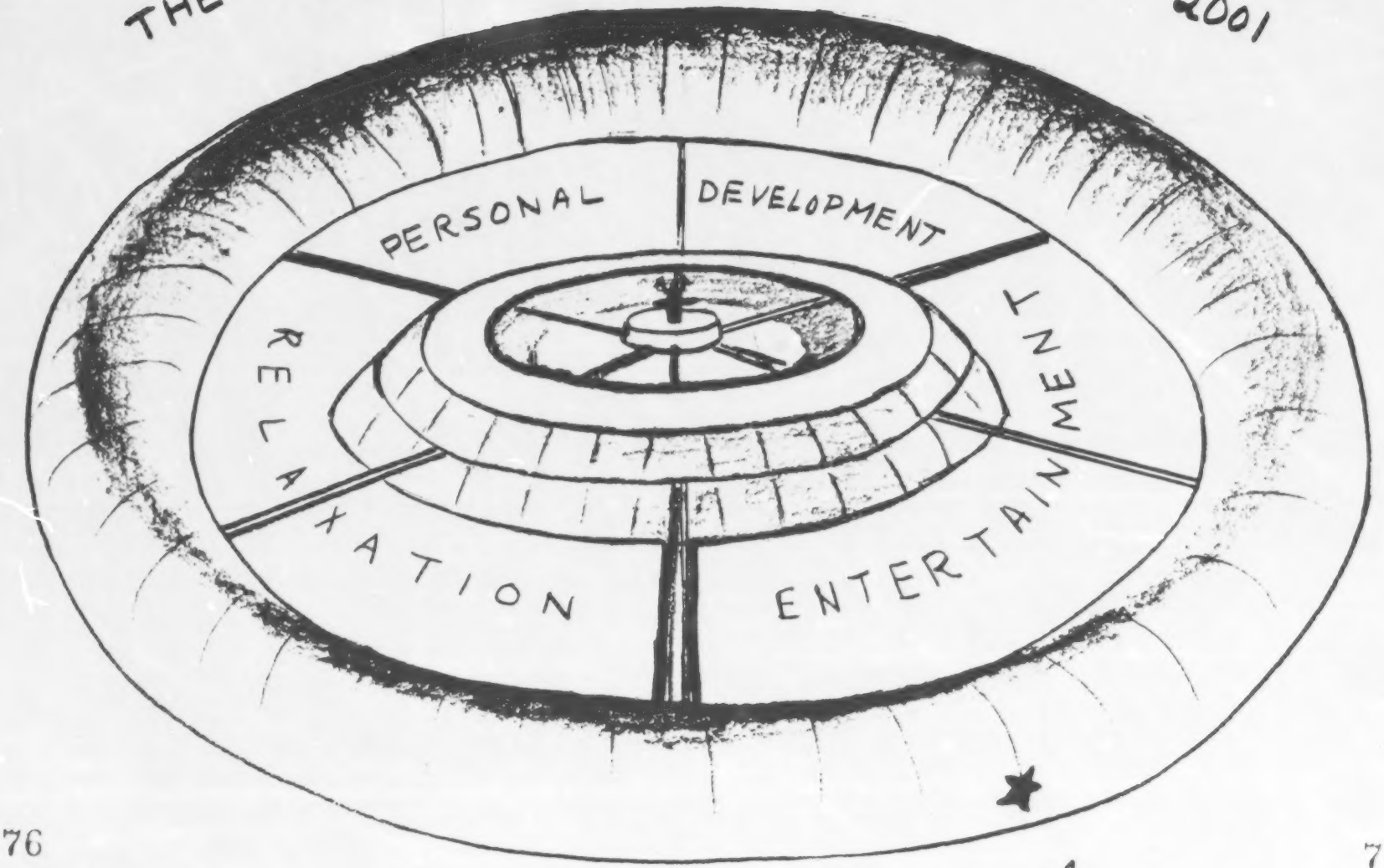
3. Each player continues to take his or her turn until 100 points have been scored or the time is up. (20 min.)

4. The object of the game is to get 100 points or as many as you can in the time allotted to play the game. (20 min.)

Design Your Own Leisure Game

Each child may design his/her own game based upon his own definition of leisure.

THE IDEAL LEISURE HABITAT GAME — 2001



Sample Game Cards (With Point Values)

RELAXATION CARDS

Collect marbles - 2
Go to the beach to sunbathe - 1
Swim - 2
Eat - 1
Carve a totem pole - 5
Paint a picture - 5
Ride a carousel - 3
Go horseback riding - 3
Daydream - 5
Play school - 4
Play the violin - 3
Play the piano - 3
Go camping - 2
Go to summer camp - 2
Play checkers - 2
Play this game - 5
Play Monopoly - 4
Play marbles - 3
Play baseball - 2
Play hockey - 2
Watch television - 1
Collect beer cans - 2
Create your own activity - 5

ENTERTAINMENT CARDS

Go to the beach to swim - 1
Go swimming - 3
Pretend you are a machine - 5
Pretend you are a gable - 2
Build a tree house - 3
Ride a carousel - 2
Watch a horse show - 3
Go to the circus - 2
Take a trip - 1
Go to a concert - 5
Go to the movies - 2
Watch television - 1
Swing - 2
Play on the teeter-totter - 4
Play low-gravity football - 2
Play on your skate board - 3
Go to a folk museum - 1
Go to an amusement park - 3
Go to a hockey game - 2
Go to the zoo - 2
Attend a baseball game - 1
Go to a play - 5
Read a book - 5
Create your own activity - 5

PERSONAL DEVELOPMENT CARDS

Learn carpentry - 5
Learn how to cook - 4
Take art lessons - 5
Write a poem - 5
Go to an art museum - 5
Take piano lessons - 4
Take golf lessons - 3
Join the Girl Scouts - 3
Go to summer camp - 2
Go to a science museum - 5
Play chess - 4
Go to the beach to collect seashells - 4
Learn how to sew - 4
Take karate lessons - 4
Take swimming lessons - 4
Write a story - 5
Take violin lessons - 4
Take dancing lessons - 5
Join a fife and drum corps - 4
Join the Boy Scouts - 3
Go to the library - 5
Read a book about leisure - 5
Create your own activity - 5

Session Four
(Collection of Creative Activities)

Brainstorming Leisure Buildings

1. With the students brainstorm all the different kinds of leisure buildings they can think of. (Some examples of leisure buildings might be as follows:)

a museum	a motel	opera house
baseball park	library	ski lodge

Playing With Ideas

2. Get an idea for a new kind of leisure building from any of the following:

   - for a new kind of aquarium from a giraffe
   - for a new kind of greenhouse from a clown
   - for a new ski lodge from an ant
   - for a new kind of theatre from a crab
   - for a new kind of mobile home from a flower
   - for a new kind of recreation center from a geometry book
   - for a new kind of library from a gymnast
   - for a new kind of clubhouse from an octopus

3. Just suppose animals had leisure buildings. Create the ideal leisure building for that animal. Choose from a list like the following:

elephant	parrot	beaver
monkey	snake	hippopotomus
panda	puppy	blunderpickle
bee	platypus	foo foo bird

4. Create a new and unusual leisure building that will represent the spirit of this class. Ideas can be drawn from symbols created by each child and placed on a class shield.

5. Create the ideal leisure building which will contain artifacts from our civilization. People from the future should be able to interpret the spirit of our society from the artifacts placed in the building. Draw a picture of the one thing you would put in the building. Why would you include that article?

6. Create a class "ad book" to increase the use of a particular leisure building in the future.

7. Design the ideal building for playful mind-stretching.

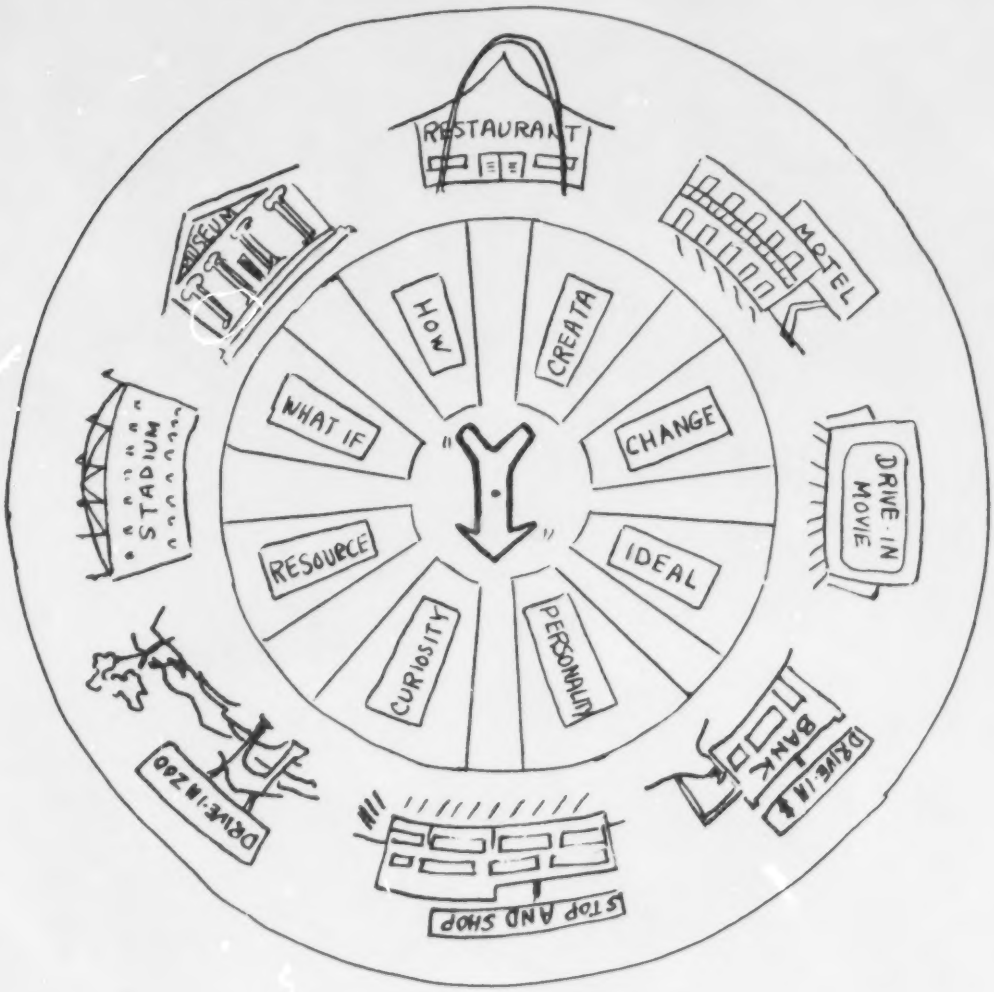
8. Write your very own nonsense poem about leisure buildings.

9. Create a new kind of leisure school.

10. Create the ideal academic recreation center.

Session Five
(Curiosity Center - The Drive-in Culture)

Create a number of curiosity centers to encourage children to explore the concept of leisure buildings which might exist in the future. Each curiosity center should contain activities for creative and critical thinking.



(A Sample Curiosity Center)

Directions for the learner:

1. Spin the spinner. Drive your vehicle to the nearest drive-in building. Choose one of the cards on the inner circle.

2. Exchange your ideas about the activity on the card with a partner who is playing at the curiosity center with you.

Sample Cards for the Curiosity Center

CHANGE CARDS (Flex.)

How would you change the drive-in building so that it will be the favorite leisure building for ...

... a robot
... Frank Lloyd Wright
... Eero Saarinen
... your sister
... Cleopatra
... Aesop
... Rod Carew

IDEAL CARDS (Flex.)

Write the ideal slogan for your building to appeal to ...

... a football player
... a busy executive
... a tired driver
... someone who's broke
... your brother

PERSONALITY CARDS (Assoc.)

Make the drive-in building ...

... more comfortable
... sing a song
... much more fun
... tell a story
... stronger

CREATA CARDS (Assoc.)

Get an idea for a new type of drive-in building from ...

... scissors
... bathtub
... rainbow
... candle

HOW CARDS (Assoc.)

How is your drive-in building ...

... happy?
... expectant?
... hopeful?
... strong?
... sad?
... peaceful?

WHAT IF CARDS (Hyp.)

What would happen to the drive-in building if ...

... all cars were run by electricity?

... a four-day work week became commonplace?

... the climate changed and it became very cold all year round

RESOURCE CARDS (SPI)

Where would you go to find out ...

... how many different jobs there are connected to the building?

... how much training is required to work there?

CURIOSITY CARDS

Pose your very own questions about this drive-in building.

Make a list of all the different questions which you would like to ask about this building in the future.

Session Six
(Introduction of Reading Activities)

Books to be Introduced

1. McHargue, Georgess. Funny Bananas: The Mystery in the Museum. New York: Dell, 1975.

2. Koningsburg, E. L. From the Mixed-Up Files of Mrs. Basil E. Frankweiler. New York: Atheneum, 1967.

Preparation

1. Have sufficient copies of both books so that students may choose.

2. Prepare a "Heuristic Habitat" with activities based on From the Mixed-Up Files of Mrs. Basil E. Frankweiler. (See description and activities on the following pages.)

3. Prepare a sourcebook of activities based on Funny Bananas. (See description and activities on the following pages.)

Introduction

1. "Now you're going to have a chance to read one of two stories that take place in a specific leisure building - a museum. Both stories take place in a museum in New York City, and both involve an exciting mystery that is solved by curious children. In both stories, the museum really changes the lives of many people involved in the mystery. We'll be reading to discover how a museum can have a great influence on a person's life."

2. Before you choose one of the books to read, let's speculate about the titles. What do you think the stories might be about?

3. After speculation about the titles of the books, allow each student to choose a book.

Independent Reading Period

1. Allow the children to begin reading during the remainder of this class session.

2. Encourage them to finish the book before the next session.

Session Seven
(Activities for Heuristic Habitat)

A heuristic habitat is a portable, simply-constructed center which allows students to work independently on creative and critical thinking activities. Each activity should take no more than one class period to complete, although students may wish to complete activities outside of class time. Ideally, a student may complete more than one activity in a single class period.

Each habitat should contain a guide which gives direction to the student. The guide may suggest a possible plan for work at the center, may outline any required activities, and may suggest ways by which students can evaluate their work. Students may wish to make a folder in which to keep their completed activities to be checked with the teacher at a later time.

There should be a sufficient number of activities so that five or six students may work at the center at one time and still have a choice of activities to complete.

(Sample activities for a Heuristic Habitat are on the following pages)

Sample Activities for a Heuristic Habitat

(To accompany From the Mixed-Up Files of Mrs. Basil E. Frankweiler - Koningsburg)

Creative Thinking Skills

1. "Secrets are safe and they do much to make you different, on the inside where it counts."

   - Show in an unusual way how a museum is like an open secret. (A.)

   - Become the Metropolitan Museum of Art. Write the lyrics of a song that will sing about all your secrets and how they make you a special, different kind of building. (Flex.)

2. "Happiness is an excitement that has found a settling-down place ..."

   - Make a miniature dictionary that will show all the ways the Metropolitan Museum would define happiness. (Flex.)

   - Become both happiness and sadness. Write a conversation between happiness and sadness after they have returned from an adventure at the museum. (Flex.)

3. "The best magic comes from true greatness."

   - Make an unusual poster to show how an art museum is like a magic show that can change people who visit it. (A.)

   - List all the ways a museum holds magic for you. (Flu.)

   - Plan an unusual museum magic card game. (O.)

4. "Lying in bed just before going to sleep is the worst time for organized thinking; it is the best time for free thinking."

   - Create the ideal "free thinking spot" for an art museum. (Flex.)

   - Create the ideal "organized thinking spot" for an art museum. (Flex.)

   - Become the Metropolitan Museum of Art. Design a brochure that advertises how you influence the way your visitors think and feel. (Flex.)

5. "I need having the secret more than I need the money."

   - Make a list of all the ways a museum needs secrets more than it needs money. (Flu.)

   - Get an idea for raising money for a museum from an artist's palette. (A)

Critical Thinking Skills

6. What might be all the reasons for supporting or refuting these statements? (SPI)

   - "Often the search proves more profitable than the goal."
   - All museums should be open to the public free of charge.
   - During a visit to an art museum, "Five minutes of planning are worth fifteen minutes of just looking."
   - An art museum is an ideal leisure building for creative mind-stretching.
   - Mrs. Frankweiler is justified in keeping her secret from the museum.

7. What is the relationship between the type of museum built and any of the following? (C-E)

   - what is to be displayed in the museum?
   - who will be most likely to visit the museum?
   - the spirit of the city where it will be built?
   - the age and value of the artifacts to be displayed?
   - its location?

8. What effect did the Metropolitan Museum of Art have on Claudia? Create a mixed-up set of files to show all the ways you think she changed. (C-E)

9. What effect did the museum have on Jamie? Become Jamie and write a short poem about your adventures. A possible title might be "A Museum Makes me Different." (C-E)

10. Become Mrs. Basil Frankweiler. You have established the following new files: "Establishing a Museum Residence," "Buying Claudia Appreciation," "Through a Museum's Eyes," "Museum Money." What interesting ideas might you include under each category? (Cat.)

Session Seven
(Activities for Sourcebook)

A sourcebook is a collection of activities. These ideas will be available to choose from on the appropriate day. Select those activities that seem most relevant to the specific group you are working with. Then, organize a lesson based on these choices.

Creative Thinking Skills

1. Show or tell how the following people view the American Museum of Natural History: Ben, Al (museum guard), You, researcher in geology, wildlife photographer, Frito. (Flex.)

2. List all the ways the American Museum of Natural History is like: (Do any 3) a. taffy, b. a puzzle, c. toothpaste, d. playground, e. scissors, f. an airplane. (Assoc.)

3. Design or create a new, interesting new hall for the American Museum of Natural History ... Try to make it something that would give you pleasure. (O.)

4. Just suppose you were given an honorary life membership to a museum of your choice ... Show all the ways your life would be different. (Flex.)

5. Draw museumitis. (o.)

6. Become Ben. Make a drawing showing how you feel about the museum as a place of leisure. (Flex.)

7. Just suppose the American Musuem of Natural History became your playground - Show all the ways your life would be different. (Flex.)

8. Create an instrument that would help you assess whether or not you have an affective adventure going to a museum or vicariously enjoying a musuem trip via books. Be clever. (O.)

9. Become the American Museum of Natural History - Show how you would view the following: Ben, Al, Late Dinosaur Hall, visitors, Late Mammals, vandalism, New York City Police Department, Frito. (Flex.)

10. Get an idea from an ice cream cone for developing a new kind of musuem - one that would give you pleasure. (Assoc.)

Sourcebook for Funny Bananas

Critical Thinking Skills

1. What caused the invention of musuems? Think of a clever way to trace the historical development of museums. (C-E) Key Reference: Mills, John FitzMaurice, Treasure Keepers. Doubleday, N. Y.: 1973.

2. What might be all the reasons for choosing to spend your Saturday in a museum instead of a friend's house? Make a drawing which shows how a museum influences how you think and how you feel. (H)

3. What effects does the American Museum of Natural History have on Ben? Create an interesting cartoon which shows these effects. (C-E)

4. What effect does the American Museum of Natural History have on Carmen? on Frito? on Walter Johanssen (the gold thief)? Draw one picture which shows the major effect on each person or animal mentioned. (C-E)

5. What might be all the reasons for supporting or refuting this statement: Museums have harmful effects on the people who visit them. Create an interesting advertisement for each side of the debate. Be clever! (SPI)

6. In order to help solve the problem of low attendance at museums, what changes in facilities and services will be needed? Design the Ideal musuem that would represent all the necessary changes. (SPI)

7. In order to determine the effects of museums on people, what information will you need? Put these ideas into an interview schedule. (SPI)

8. What might be all the reasons for building a new museum? Show the kinds of museums that you think will be needed in the future, based on these reasons. (H)

9. What are all the reasons for the existence of museums? Make a booklet which shows all the things museums do for people. (SPI)

10. Write a scenario which tells what would happen to our society if we permanently closed all museums. (H)

Session Eight
(A Creative Adventure)

Preparation

1. The next two sessions will involve a trip to the Children's Museum in Jamaica Plain, Boston. Information about class visits to the museum may be obtained by telephoning the museum (617) 522-4800. The museum is open from 10-5 on weekdays (except for the month of September when the museum is closed).

2. Make available copies of the pages that follow for each member of the group.

Purpose for the Trip

1. The purpose for the trip to this particular museum is so that the children can experience the effect that an unusual kind of leisure building (a museum that encourages children to touch and make things) can have upon the people that visit.

2. Another purpose is to encourage students to think further about the messages which buildings convey.

On the Way to the Museum

1. Distribute copies of "The Great Building Scavenger Hunt" to the students.

2. Ask children to find examples of buildings that fit the descriptions. Children should share their findings with their friends as they travel on the bus. This is a fun activity designed to make children more aware of the kinds of buildings around them and the messages they convey.

At the Museum

1. Distribute one copy of "I Am the Children's Museum" to each child. Two different versions are provided so that children will have different experiences.

2. Ask each child to pretend that he/she IS the museum. As the child travels around the museum, taking part in the activities provided, he/she should try to complete as many of the sentences on the activity sheet as time allows.

THE GREAT BUILDING SCAVENGER HUNT

Directions: While traveling on the bus to the museum, see if you can spot buildings that fit these descriptions. Share your findings with your friends who are sitting near you on the bus.

CAN YOU SPOT A BUILDING ...

... that is taking it easy

... snuggled into its shrubs

... saying "Leave me alone!"

... that has gone to sleep

... working overtime

... with a coat of many colors

... with a gambrel roof

... with a veranda

... with a Greek ancestor

... that needs a new face

... with more than 2 gables

... with a tall spire

... with its eyes closed

... bursting at the seams

... with no friends

... that is a gourmet

... that needs a good meal

... that has time to spare

... that is posing for a picture

... that is old and comfortable

... that helps people

... dressed for a fancy party

... in need of emergency aid

... with a dormer window

... with a colonnade

... that is proud of itself

... with a new suit

... that says "Welcome inside!"

... making lots of noise

... with at least ten steps

... with its mouth open

... having a good time

... with a Chinese ancestor

... designed for the future

... that is advertising itself

... that would give an interesting interview

I AM THE CHILDREN'S MUSEUM

Directions: Pretend that YOU are the Children's Museum. How would you complete the following?

1. The most important thing I have to say is ...
2. I feel happy when ...
3. I am unique because ...
4. I like to teach people ...
5. What I want most out of life is ...
6. My soul is ...
7. My backyard is ...
8. I am like a soldier because ...
9. I feel children should ...
10. My architect tried to ...
11. I feel sad when ...
12. I like to think about ...
13. I am supported by ...
14. My friends are ...
15. My services could be improved by ...

I AM THE CHILDREN'S MUSEUM

Directions: Pretend that YOU are the Children's Museum. How would you complete the following?

1. The most unusual thing about me is ...

2. The most important job I have is ...

3. To me beauty is ...

4. My strengths are ...

5. I am like chocolate cake because ...

6. I brag about ...

7. I am made out of ...

8. I wish I could ...

9. I am held together by ...

10. I am helpful when I ...

11. My enemy is ...

12. I value ...

13. My secret is ...

14. My neighborhood is ...

15. My stages in life are ...

Session Nine
(A Creative Production)

Preparation

1. Have an ample supply of 12" X 18" drawing paper, enough for several sheets for each child.

2. Have a supply of magic markers or crayons.

Purpose of the Session

1. The purpose of this activity is to allow children to refine their ideas collected at the Children's Museum during the previous session.

2. Another purpose is to encourage the children to produce a creative product as a result of their experiences at the museum.

Procedure

1. Ask the children to create a coloring book that will reflect the ideas generated by the activity "I Am the Children's Museum."

2. The format of the pages should be developed by the children during a short group discussion.

Session Ten
(Idea Stations)

The Students Receive Their Commission

"Today you receive your commission as an architect. You are to design and build a model of the ideal leisure building for the future. Your model can be any size or any shape. Keep in mind all the ideas about leisure and buildings that we have experienced for the past few weeks."

Where Do Ideas Come From?

Set up the following Idea Stations around the classroom:

1. A Book Station

   This station will contain books about leisure, architecture, or the future. Choose books with many pictures from the list of knowledge sources listed earlier.

2. A Constructo-Station

   This station will contain materials such as Lincoln logs, Constructo-straws, blocks, scrap pieces of wood, clay, old bricks, or tiles.

3. A Sandbox

   This station will consist of a small sandbox with sand, water, and an interesting array of tools to enable children to build unusual buildings of sand.

4. A Music Corner

   This station will include either records or tapes from which children can get ideas about building an unusual kind of building.

5. A Junk Table

   This station should contain a great many "junk" materials that are unrelated to building such as egg cartons, yarn, cloth, light bulbs, styrofoam, etc.

6. A Contemplation Corner

   This is an area where children can meet to think about their own building and to exchange ideas with their friends.

7. A Cinema Center

   Choose a film from the list of resources and show it, with or without sound, in one area of the room.

8. The Slide Center

   If you can obtain slides of buildings around the world, set up a station where children can view them on a small portable viewer.

9. Blueprint Center

   If you can obtain blueprints from an architectural firm, they would make an ideal idea station.

10. Geometry Station

    This station should contain models of geometric shapes such as are available for teaching volume. Cubes, tetrahedrons, prisms, and other polyhedrons might be included.

Making an Idea Folder

Encourage the students to keep an idea folder so that they can write down all their ideas gathered during this exploratory session.

Encourage children to add ideas to their folders during the next two sessions. Have them keep in mind the following:

1. Your building should reflect your own ideas about worthy use of leisure time in the future.

2. Your building should reflect your own ideas about the effects that buildings have upon people.

3. Your building should reflect your own ideas about beauty.

Session Eleven
(Search Stations)

Purpose

The purpose of this session is to allow students to become familiar with the ideas of nine famous architects. The emphasis is not on the lives of these people but on their works.

Preparation

1. Collect as many resources as possible concerning the following architects:

Frank Lloyd Wright	Le Corbusier
Henry Hobson Richardson	Richard Buckminster Fuller
Eero Saarinen	Ludwig Mies Van Der Rohe
Michelangelo Buonarroti	Walter Gropius
Louis H. Sullivan	

   (A resource list is given on the following pages.)

2. Introduce each architect briefly by showing a picture of a building designed by each.

3. Ask each child to choose an architect.

4. Tell the class that they will each serve on a panel discussion during the next session. Each child will be asked to play the role of the architect chosen. Each architect will be asked to respond to these three questions:

   a. How did you get your ideas for your buildings?

   b. What kind of materials did you like to use? Why?

   c. How would you define a beautiful building?

Set Up Search Stations

1. Set out the materials so that each child will have access to information about his/her architect.

2. If necessary assist the students in finding information to answer the three questions posed.

Resources for: Students, As Architects, Speak

FRANK LLOYD WRIGHT (1869-1959)

Books:

Andrews, Wayne. Architecture in Chicago and Mid-America - A Photographic History. N. Y.: Harper & Row, 1973.
Forsee, Aylesa. Frank Lloyd Wright - Rebel in Concrete. Philadelphia: Macrae Smith, 1959.
Forsee, Aylesa. Men of Modern Architecture - Giants in Glass, Steel and Stone. Philadelphia: Macrae Smith, 1966.
Jacobs, Herbert. Frank Lloyd Wright - America's Greatest Architect. N. Y.: Harcourt, 1965.
Rogers, W.G. What's Up in Architecture - A Look at Modern Building. N. Y.: Harcourt, 1965.
Willard, Charlotte. Frank Lloyd Wright. N.Y.: MacMillan, 1972.
Wright, Frank Lloyd. The Future of Architecture. N.Y.: Bramhall House, Horizon Press, 1953.
Wright, Frank Lloyd. A Testament. N. Y.: Bramhall House, 1957.

Film:

Frank Lloyd Wright. 28 min., EBEC, 1958.

Photographs:

Selected pictures of Wright buildings

LE CORBUSIER (1887-1965) (Charles-Édouard Jeanneret)

Books:

Rogers, W.G. What's Up in Architecture - A Look at Modern Building. N.Y.: Harcourt, 1965.
White, Norval. The Architecture Book. N.Y.: Knopf, 1976.

Photographs:

Selected pictures of LeCorbusier buildings

RICHARD BUCKMINSTER FULLER (1895-)

Books:

Fuller, R. Buckminster, & Marks, Robert. The Dymaxion World of Buckminster Fuller. N. Y.: Doubleday, 1973.
McHale, John. R. Buckminster Fuller. N. Y.: Braziller, 1962.
Rosen, Sidney. Wizard of the Dome - R. Buckminster Fuller, Designer for the Future. Boston: Little Brown, 1969.
White, Norval. The Architecture Book. N. Y.: Knopf, 1976.

Film:

Futurists. 25 min., color, McGraw-Hill, 1967.

Photographs:

Selected pictures of Fuller buildings

Resources for: Students, As Architects, Speak (Cont.)

HENRY HOBSON RICHARDSON (1838-1886)

Books:

Rogers, W.G. What's Up in Architecture - A Look at Modern Building. N. Y.: Harcourt, 1965.
White, Norval. The Architecture Book. N. Y.: Knopf, 1976.

Photographs:

Selected pictures of Richardson buildings

EERO SAARINEN (1910-1961)

Books:

Forsee, Aylesa. Men of Modern Architecture - Giants in Glass, Steel and Stone. Philadelphia: Macrae Smith, 1966.
White, Norval. The Architecture Book. N. Y.: Knopf, 1976.

Film:

Monument to the Dream. 27 min., color, A.C.I., 1967.

Photographs:

Selected pictures of Saarinen buildings

LUDWIG MIES VAN DER ROHE (1886-1969)

Books:

Forsee, Aylesa. Men of Modern Architecture - Giants in Glass, Steel and Stone. Philadelphia: Macrae Smith, 1966.
Rogers, W. G. What's Up in Architecture - A Look at Modern Building. N. Y.: Harcourt, 1965.
White, Norval. The Architecture Book. N. Y.: Knopf, 1976.

Photographs:

Selected pictures of Mies Van Der Rohe buildings

MICHELANGELO BUONARROTI (1475-1564)

Books:

Coughlan, Robert. The World of Michelangelo 1475-1564. N. Y.: Time-Life, 1966.
Peck, Anne Merriman. Wings of an Eagle, The Story of Michelangelo. N. Y.: Hawthorne, 1963.
Raboff, Ernest. Michelangelo Buonarroti. N. Y.: Doubleday, 1971.
Stearns, Monroe. Michelangelo. N. Y.: Watts, 1970.
Stone, Irving. The Great Adventure of Michelangelo. N. Y.: Doubleday, 1961.

Photographs:

Selected pictures of Michelangelo buildings

WALTER GROPIUS (1883-1969)

Books:

Forsee, Aylesa. Men of Modern Architecture - Giants in Glass, Steel and Stone. Philadelphia: Macrae Smith, 1966.
White, Norval. The Architecture Book. N. Y.: Knopf, 1976.

Photographs:

Selected pictures of Gropius buildings

LOUIS H. SULLIVAN (1856-1924)

Books:

Andrews, Wayne. Architecture in Chicago and Mid-America - A Photographic History. N. Y.: Harper & Row, 1973.
Forsee, Aylesa. Men of Modern Architecture - Giants in Glass, Steel and Stone. Philadelphia: Macrae Smith, 1966.
Rogers, W.G. What's Up in Architecture - A Look at Modern Building. N. Y.: Harcourt, 1965.
White, Norval. The Architecture Book. N. Y.: Knopf, 1976.

Photographs:

Selected pictures of Sullivan buildings

Session Twelve
(Students, As Architects, Speak)

Purpose

The purpose of this session is to allow students to share the results of their research on famous architects.

Preparation

1. Have the children set up the furniture so that they have a panel discussion situation.

2. All children may participate in one panel discussion or they may choose to have two discussions so that each set of architects may have an audience.

3. Choose one student to act as moderator.

4. Each student plays the role of his/her architect and responds to the following questions:

   a. How did you get your ideas for your buildings?

   b. What kind of materials did you like to use? Why?

   c. How would you define a beautiful building?

5. Encourage the students, as architects, to share any additional information they may have discovered during the course of their research.

Preparation for the Next Session

1. Tell the students that the next time they meet they will have a chance to talk with a "real" architect, an architect from the community who has volunteered to come to the class.

2. Have the students brainstorm all the questions they might like to ask their visitor.

Session Thirteen
(Resource Presentation)

Purpose

At this session the "student architects" will have an opportunity to talk with a "real" architect, an architect from the community who has volunteered to talk with the children and answer their questions about the actual methods used in designing buildings. Encourage students to use the ideas and questions brainstormed in the previous session.

Sessions Fourteen and Fifteen
(Creative Production)

Review the Commission

"You are to design and build a model of the ideal leisure building for the future. Your model can be any size or shape. Keep in mind all the ideas about leisure and buildings that we have experienced for the past few weeks."

"Use all the ideas you have accumulated in your idea folder. Keep in mind the following:

1. Your building should reflect your own ideas about worthy use of leisure time in the future.

2. Your building should reflect your own ideas about the effects that buildings have upon people.

3. Your building should reflect your own ideas about beauty.

4. Keep in mind the ideas gathered from our architect visitor and from the ideas gathered during your research into a famous architect."

Design and Build Your Own Leisure Building

The teacher now serves as a resource to encourage and help students create their own design and model.

Session Sixteen
(Creative Production)

Purpose

Share the imaginative book by Forrest Wilson, What It Feels Like To Be A Building.

Ask the children to write about how they feel as the building they have just created.

Session Seventeen
(Evaluation)

Student Architects Speak

Students may now repeat their panel discussion activity; this time, however, they can speak as architects themselves and respond to the same questions posed earlier.

a. How did you get your ideas for your building?

b. What kind of materials did you use and why?

c. How does your building reflect your ideas of beauty?

d. How does your building reflect your ideas about worthy use of leisure time in the future?

e. What effect would your leisure building have upon individuals and society in the future?

Self Evaluation

Write the incomplete sentences on the following page on a blackboard or on an overhead projector transparency.

Session Seventeen
(Self Evaluation)

Preparation

Write the following incomplete sentences on the board or on an overhead transparency. Ask each student to complete at least eight of the sentences or more if the time allows.

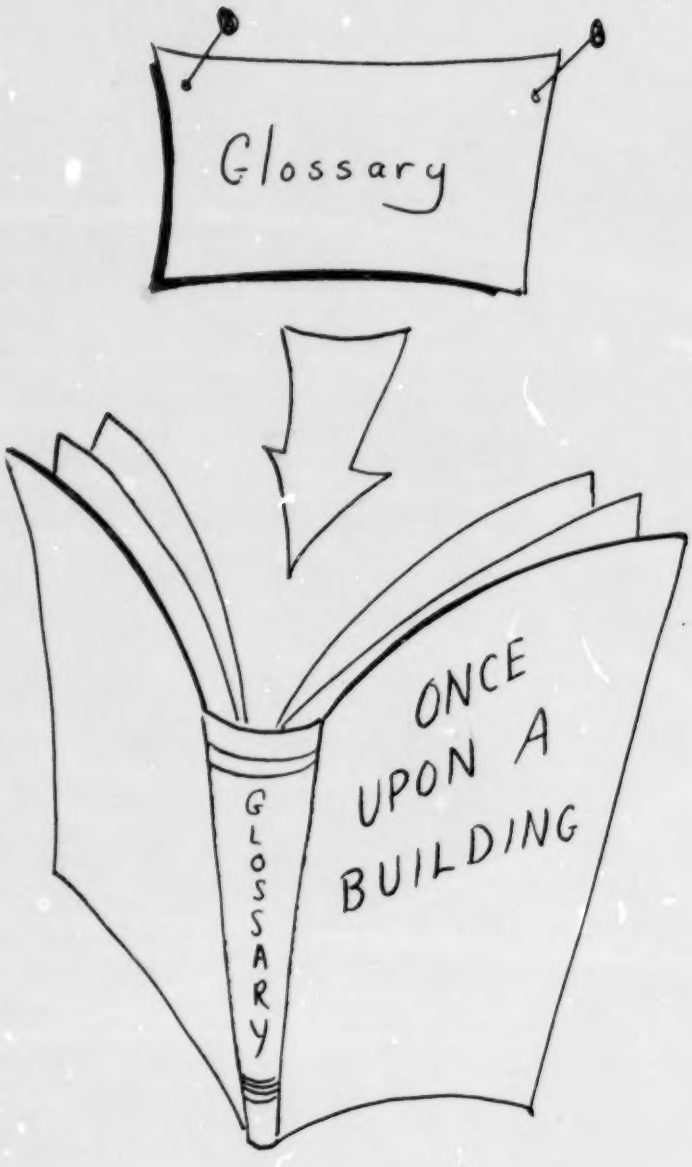
1. As an architect I feel ...
2. I feel proud of ...
3. I wish I could have ...
4. I expressed my uniqueness by ...
5. My hardest job was ...
6. I found it easy to ...
7. I became frustrated when ...
8. I was disappointed in ...
9. I got excited about ...
10. I got the most ideas from ...
11. I am still puzzled by ...
12. The most unusual thing about my building is ...
13. The idea that I most wanted to communicate was ...
14. If I could start over again I would ...

Session Eighteen
(Open-ended Adventure)

Brainstorm with the children all the things they could do for the next three sessions.

(Sample Ideas Obtained From Brainstorming)

- Describe my building as a link to the past and a legacy to the future.
- Make our own museum to display our models.
- Write a story that takes place inside my building.
- Improve and elaborate upon my model building.
- Make an addition to my building for the future.
- Make a blueprint for someone else to follow in making my building.
- Make a real estate ad for my building.
- Create the ideal environment for my building.
- Write the script for a televised tour of my building.
- Write the autobiography of my building.
- Adapt my building for under water or in space.
- Create a new set of building materials for children in the future to play with.
- Draw a cartoon that shows how my building is viewed now or in the future.
- Create a catalogue for my model.
- Write to an architect to see if he/she would be interested in my ideas.
- Write a play about something unusual that has happened in my building.
- Make an anthology about leisure buildings of the future.


Glossary
GLOSSARY
ONCE
UPON A
BUILDING

GLOSSARY

architect: the author(s) of the prototype used

blueprint: the prototype

brick: differentiated learning activity designed to develop higher-level thinking

bricklaying skills: affective and cognitive skills used by the contractor to construct the building

building: the process of creating a differentiated learning environment

casement window: a resource person or a student acting as a resource person

clay: raw materials used for making bricks (e.g. questioning patterns, student processes, student outcomes); instructional strategies based on cognitive needs

collection of walls: a unit; several stacks of bricks ready to be mortared

contractor: the teacher as a curriculum builder

creative adventure: a collection of creative activities designed for a particular purpose

creative production: a creative product produced by students

curiosity center: activity designed for idea generation

differentiated learning environment: an environment which provides for the affective and cognitive needs of gifted/talented students

firing process: the creative process used to combine clay with water to make a brick; the creating of a differentiated learning activity

foundation: administrative design

framework: integrated unit structure

glass: fired sand used to make windows; a learning activity designed to teach content

heuristic habitat: a collection of bricks used by the subcontractor for cognitive development

idea station: a center where students use varied resources for idea finding; a window

mortar: freedoms based upon affective needs; that which holds the bricks together and holds the walls up

picture window: inductive lesson or awareness activity that teaches a concept

plot of land: those elements essential to the development of a program for the gifted and talented

road: the philosophy of a gifted and talented program

sand: raw material; knowledge source used as a basis for making glass

search station: independent research center; a window

skylight: curiosity center, idea station, or search station where students use resources to find or generate ideas

source book: a collection of bricks used by the contractor for cognitive development in subcontractors

stained glass window: a knowledge activity designed to show the structure of what is being studied

subcontractor: gifted and talented student

wall: a stack of bricks and/or windows ready to be mortared (e.g. heuristic habitat, source book, collection of creative activities)

water: sources of knowledge, both human and material; content objectives; used as a vehicle for developing higher-level thinking, as in making bricks

window: glass ready to be placed at appropriate place in the wall